



Transportation Concept Report

State Route 120

District 10

June 2017



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California Department of Transportation

*Provide a safe, sustainable, integrated, and efficient transportation system
to enhance California's economy and livability.*

Approvals:


DENNIS T. AGAR
District 10 Director
Stockton

6/13/17
Date


KEN BAXTER
District 10 Deputy Director
Planning, Local Assistance,
and Environmental

6/13/17
Date

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ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by evaluating conditions and proposing enhancements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety and health; stewardship and efficiency; sustainability, livability and economy, system performance, and organization excellence.

The System Planning process is primarily composed of four parts: the District System Management Plan (DSMP), the Transportation Concept Report (TCR), the Corridor System Management Plan (CSMP), and the DSMP Project List. The district-wide DSMP is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. The CSMP is a complex, multi-jurisdictional planning document that identifies future needs within corridors experiencing or expected to experience high levels of congestion. The CSMP serves as a TCR for segments covered by the CSMP. The DSMP Project List is a list of planned and partially programmed transportation projects used to recommend projects for funding. These System Planning products are also intended as resources for stakeholders, the public, and partner, regional, and local agencies.

TCR Purpose

California's State Highway System needs long range planning documents to guide the logical development of transportation systems as required by CA Gov. Code §65086 and as necessitated by the public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20-25 year planning horizon. The TCR is developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements and travel demand management components of the corridor.

STAKEHOLDER PARTICIPATION

The State Route (SR) evaluated in this TCR employed an outreach strategy consistent with local Metropolitan Planning Organization (MPO) and Regional Transportation Planning Agency (RTPA) outreach conducted with the development of the Overall Work Program (OWP). This strategy avoids duplicative effort, and reduces public confusion as to the aims of local and regional transportation planning. As the OWP intends to meet federal requirements outlined in 23 Code of Federal Regulations (CFR) 450.314, and in both the Fixing America's Surface transportation (FAST) Act and the Moving Ahead for Progress in the 21st Century Act (MAP-21), external stakeholder needs can be addressed by local partner outreach efforts related to the OWP. Development of the TCR includes initial outreach to internal partners—these would be Traffic Operations, Traffic Safety, Project Management, Maintenance, Environmental Support, as well as others.

EXECUTIVE SUMMARY

As part of the original SHS, SR 120 currently runs in a west to east direction starting at I-5 in the City of Lathrop in San Joaquin County, and terminating at SR 6 north of Bishop in Inyo County. The inclusion of SR 120 into the SHS occurred in four stages. Section one, part of the original proposed SHS in 1911, includes the portion of SR 120 between Yosemite Junction (where SR 108 and SR 120 diverge) and United States Highway (US) 395, serving Yosemite National Park (The Park). Section two, a new alignment extending from Manteca, through the City of Escalon, to the City of Oakdale, allowed traffic from what was US 50 to continue directly eastwards to The Park, and provided a parallel route to SR 108 on the north side of the Stanislaus River. Section three, the freeway between I-5 and SR 99, relinquished the older conventional highway along Yosemite Avenue in Manteca, for an elevated freeway bypassing Manteca to the south. Section four (outside of District 10) extended SR 120 from Lee Vining on US 395 eastwards to US 6 (now SR 6) at Benton Hot Springs.

Included in the Freeway and Expressway System (FES) and the Interregional Road System (IRRS), the concept Level of Service (LOS) for SR 120 is 'C' for rural segments, and 'D' for urban segments.¹ With the exception of the portion of SR 120 between Escalon and Oakdale, and the four lane expressway segments in Stanislaus and Tuolumne Counties, all segments will not meet their LOS performance standard by 2040. A portion of SR 120 in Tuolumne County is eligible but not designated as a scenic highway, between SR 49 north and SR 49 south.²

Within District 10, SR 120's current facility is variable--a four lane freeway between I-5 and SR 99, with intermingled conventional highway and expressway sections east of SR 99. The Capital Facility Concept (Concept Facility) for the period between the Base Year (BY) 2017 and the Horizon Year (HY) 2040 is for a six lane freeway between I-5 and SR 99. The two additional lanes may be converted to high occupancy vehicle (HOV) or managed lanes consistent with adjoining facilities having these features. East of SR 99 the Concept Facility is a four lane expressway (with the exception of a two lane expressway between the Cities of Escalon and Oakdale) to the intersection with SR 108 (Yosemite Junction) in Tuolumne County. South from SR 108 (Yosemite Junction) into The Park, the Concept Facility is a two lane expressway with passing lanes wherever feasible.

Beyond the HY of 2040, the freeway portion of SR 120 between I-5 and SR 99 is anticipated to be a six lane facility with four general use lanes and two managed lanes with direct carpool and transit vehicle access. East of SR 99, the facility of SR 120 is anticipated to be expressway throughout, with four lanes between Manteca and the SR 108 (Yosemite Junction). Beyond SR 108 (Yosemite Junction) the facility remains expressway but at two lanes throughout to The Park, but with passing or climbing lanes where ever needed. Transportation planning efforts in The Park and Caltrans District 9 for SR 120 are consistent with the Concept Facility.

Existing bicycle and pedestrian facilities on SR 120 are neither well developed nor integrated together. With the exception of a small Class II bicycle facility in Escalon, the bicycle facility is a shared travel lane facility throughout. With the exception of Oakdale, pedestrian facilities within communities on SR 120 lack continuous sidewalks, crosswalks at intersections, and access ramps consistent with current Americans with Disabilities (ADA) design guidelines. Improvements to address active transportation need to include shoulder widening to eight feet to better accommodate bicyclists and upgrades to pedestrian facilities within communities.³ Funding for these improvements will likely be tied to non-safety projects along the corridor if not locally funded, and the efforts in line with Caltrans commitment to Complete Streets; Context Sensitive Solutions (CSS); Safe Routes to Schools; and, similar policies and programs. The ultimate bicycle facility will need to be at a minimum a Class IV protected bicycle lane.

¹ Caltrans has yet to formulate guidance on employing Vehicle Miles Traveled (VMT) as a performance standard or measure.

² The portion of SR 120 with The Park is designated a National Scenic Byway.

³ Although installation of eight foot shoulders and posting of "Share the Road" signage may upgrade the bicycle facility to Class III, modeling suggests the existing need is for bicycle facilities separate from the travel lane.

Transit networks along SR 120 are not well developed. Within the four communities along the corridor, SR 120 appears to not be an important interregional work commute corridor compared to SR 108 based upon census data, though it appears to support a work commute from the City of Sonora into the San Joaquin Valley and possibly the Bay Area. Although local development and improvement of transit would be supported as a component of complete streets, there appears little justification for inclusion as a component of the SR 120 corridor with the exception of Groveland where SR 120 performs as a 'Main Street'. However, transit service in Groveland currently consists of seasonal service by Yosemite Area Transit Service (YARTS) rather than a year round deviated fixed route service. In addition, YARTS primary function along SR 120 is to provide interregional transit connections to The Park during the peak tourist season, and runs in directions opposite the work commute from Groveland.

Improving and upgrading the SR 120 facility access to The Park could be at odds with the effort to reduce motor vehicle congestion and pollution within The Park. Further integration of an active transportation network within the corridor—bicycle and pedestrian travel facilities linked to transit centers and stops accessing the Yosemite Valley and with the motels and hotels outside The Park should be a priority. Extended service by YARTS with more daily trips and a longer season, along with the inclusion of express service directly connected to the Bay Area via SR 120 may assist in achieving this goal. A key operational improvement would be widening and realigning New Priest Grade to accommodate 45 foot long busses with turnouts.⁴ Additional efforts might focus on improved bicycle access to The Park by provision of parallel bicycle paths or lanes. Likely candidates for alternate routes might include portions of the Hetch Hetchy Railroad grade, former segments of Big Oak Flat Road, or abandoned logging railroads.

Between SR 99 and Yosemite Junction SR 120 passes through the Cities of Manteca, Escalon, and Oakdale. Within each of these cities the highway experiences greater congestion and lower traffic speeds than are desirable on an expressway. Currently, there is a planned project to bypass the portion of SR 120 that serves the eastern portion of Manteca, by rerouting SR 120 south from Jack Tone Road to what is the current SR 120 west and SR 99 interchange. No formal bypasses of the other two cities are currently planned for.⁵

The freeway portion of SR 120 has a substantial goods movement role in accessing freight movement to and from the Bay Area via I-5 and SR 99. The close proximity to the Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railroad (BNSF) intermodal yards has led to several warehouse, transloading, and trucking firms to locate near the corridor in Lathrop, Manteca, and Stockton. There is a need to designate several of the local streets and roads connected to SR 120 as the Surface Transportation Assistance Act (STAA) compliant Terminal Access (TA) routes to facilitate more efficient last mile connections between these and the National Truck Network (NTN).

At grade railroad crossings occur at several locations on SR 120, but at present there are no plans to provide grade separations. These locations include the intersection with French Camp Road; the Escalon-Belotta Road and McHenry Avenue intersection in Escalon; the crossing of 'F' Street in Oakdale, just north of where SR 120 and SR 108 merge; and, the crossing near the Sierra Pacific lumbermill between Yosemite Junction and Chinese Camp. Although all may present a safety risk, the only suggested possible need for a grade crossing might be in Escalon, as it complicates highway operations with the traffic signal for the intersection.

Aside from the freeway facility, SR 120 is a minor goods movement facility from a statewide perspective. The only significant urban destination on the route is the City of Sonora with the corridor that combines SR 120 with SR 108 and SR 49. Truck accessibility along that corridor retains consistency with the provisions of the STAA throughout its extent. However, SR 120 past SR 108 (Yosemite Junction) is only TA to the Moccasin Power Plant

⁴ Priest Grade Feasibility Study, Expenditure Authorization (EA)10-0G560K and 10-0Y450-, State Highway Operation and Protection Program (SHOPP), (SOP), March 2017)

⁵ The Escalon Bypass was included as a Tier II project in the 2007 San Joaquin County RTP, and an Oakdale bypass might be a component of the North County Corridor but the current alternatives under consideration do not include realignment of SR 120.

Moccasin Power Plant near the SR 49 south junction. Beyond this, New Priest Grade (segment TUO 8) prevents the movement of STAA and California legal trucks into the communities of Big Oak Flat and Groveland along with The Park. Currently proposed improvements are unlikely to alter the Truck Advisory that no truck with a king pin to rear axle of 30 feet or greater is allowed beyond SR 49 south.

Demand management strategies such as ramp metering should be in place for the freeway portion of SR 120 by the HY of 2040. Priority had been given to SR 99 and I-5, but current planning seeks to see installation within the next five to ten years.⁶ Affiliated with the installation of ramp meters is the inclusion of SR 120 within a pilot Corridor System Management Plan that will include I-205, I-5 and SR 120. At present District 10 has applied for the program, but the future status is unclear. At present above ground facilities for ramp metering are only in place on portions of SR 99 in San Joaquin County.

Managed lanes are identified as an operational improvement after the HY of 2040 for the freeway portion of SR 120. Expansion of the freeway facility to six lanes is currently scheduled of 2032, conversion of these lanes in to High Occupancy Vehicle (HOV) lanes follows upon the development of an HOV network extending from the San Joaquin Valley to the Bay Area along the I-580 and I-205 corridor to I-5 extending into Stockton near March Lane.

There is a need to expand, upgrade, and maintain the elements of Intelligent Transportation System (ITS) throughout the corridor. In locations other than on the freeway corridor, Vehicle Monitoring Stations (VMS) that record traffic data with in real time are only found along the SR 120 corridor in Tuolumne County.⁷ Given the potential high traffic volumes related to recreational travel to The Park, increasing the number of Changeable Message Signs (CMS) along with Highway Advisory Radio (HAR) signs throughout the corridor may assist in directing travelers to alternate routes given congestion and potential incident closures.

⁶ EA 10-1F040- is a candidate SHÖPP project to install ramp metering on SR 120 (SOP, March, 2017).

⁷ In the past these were referred to as Traffic Monitoring Stations (TMS).

Concept Summary

SR 120 Concept Summary					
Segment	Segment Description	Existing Facility (2015)	Capital Facility Concept (2040)	20-25 Year System Operations and Management Concept	Post-25 Year Concept
SJ 1	I-5 to Airport Way	Four Lane Freeway	Six Lane Freeway	Demand Management in Peak Hour (Ramp Metering)	Six Lane Freeway (HOV)
SJ 2	Airport Way to SR 99				
SJ 3	SR 99 to Austin Road	Four Lane Highway	Four Lane Highway/ Two Lane Expressway on New Alignment	Signal Coordination Synchronized with Ramp Metering on SR 99, Separated Bicycle Lanes	Four Lane Expressway
SJ 4	Austin Road to Brennan Road	Two Lane Expressway	Four Lane Expressway/ Two Lane Expressway on New Alignment	Passing Lanes; Separated Bicycle Lane	
SJ 5	Brennan Road to Campbell Avenue	Two Lane Highway	Four Lane Expressway on Existing Alignment, Two Lane Expressway on New Alignment	Grade separation; Roundabouts; Separated Bicycle Lanes; Pedestrian Improvements	
SJ 6	Campbell Avenue to Stanislaus County line	Two Lane Expressway	Two Lane Expressway	Separated Bicycle Lanes	
STA 1	San Joaquin County line to Valley Home Road				
STA 2	Valley Home Road to Rodden Road				
STA 3	Rodden Road to SR 108 (F Street)	Two Lane Highway			
STA 4	SR 108 (F Street) to Maag Road				
STA 5	Maag Road to Wamble Road				
STA 6	Wamble Road to Lancaster Road	Four Lane Expressway	Four Lane Expressway		
STA 7	Lancaster Road to Sonora Road	Two Lane Highway			
STA 8	Sonora Road to Tuolumne County line	Four Lane Expressway			
TUO 1	Stanislaus County Line to Green Springs Road				

SR 120 Concept Summary (Continued)					
Segment	Segment Description	Existing Facility (2015)	Capital Facility Concept (2040)	20-25 Year System Operations and Management Concept	Post-25 Year Concept
TUO 2	Green Springs Road to La Grange Road (J 59)	Two Lane Expressway	Four Lane Expressway	Separated Bicycle Lanes	Four Lane Expressway
TUO 3	La Grange Road (J 59) to O'Byrnes Ferry Road				
TUO 4	O'Byrnes Ferry Road to SR 108 N				
TUO 5	SR 108 N to SR 49 N	Two Lane Highway	Two Lane Expressway	Separated Bicycle Lanes, Passing Lanes, Shoulder Widening	Two Lane Expressway
TUO 6	SR 49 N to Shawmut Road				
TUO 7	Shawmut Road to SR 49 S	Two Lane Expressway			
TUO 8	SR 49 S to Old Priest Grade Road E				
TUO 9	Old Priest Grade Road E to Memorial Road				
TUO 10	Memorial Road to Ferretti Road W				
TUO 11	Ferretti Road W to Elmore Road				
TUO 12	Elmore Road to Mariposa County line.				
MPA 1	Tuolumne County line to Tuolumne County line				
TUO 13	Mariposa County line to The Park entrance				

Concept Rationale

The concept rationale is based on two factors: (1) the minimum LOS tolerable for peak hour conditions, and (2) the type of facility necessary to provide the concept LOS.⁸ The IRRS is a system of interregional state highway routes outside urbanized areas that provide access to, and links between the State's economic centers, major recreational areas, and urban and rural regions. The concept LOS for an IRRS route is 'C' in rural areas, and 'D' in urban areas. Routes designated in the IRRS have a minimal facility of expressway. Because of its value in accessing The Park, SR 120 was included in the IRRS.

The freeway portion of SR 120 supports a large volume work commute from the Modesto and Manteca areas into the Bay Area. Currently, the SJ COG RTP (2014) identifies a project to expand the freeway facility to six lanes by

⁸ Pending guidance on the application of Vehicle Miles Traveled, LOS as a performance standard will continue to be applied.

2032.⁹ As a commuter route, a desired outcome is that this additional lane be a managed lane for use by carpools and transit, with direct access to the managed lane for carpools and transit.

The facility from the City of Manteca east of SR 99 to The Park is to be expressway. Currently, that portion of SR 120 is either conventional highway or expressway, with most segments deficient. The capital facility by 2040 should be expanded to four lanes between Manteca and the intersection with SR 108 (Segment 5, Yosemite Junction). The intersection at SR 49 south also marks the transition from a legal STAA TA truck route to a California Legal Advisory Route (Trucks with a king pin to rear axle of thirty feet or less) extending east of the intersection to The Park entrance.

Formulation of the concept facility was developed by coordinating planning identified in the two Metropolitan Planning Organization's (MPO) and the two Regional Transportation Planning Agencies' (RTPA) Regional Transportation Plans (RTP) with the ITSP. The Concept Facility will be a six lane freeway with HOV lanes in each direction between I-5 and SR 99, and a four lane expressway between SR 99 and Yosemite Junction (Segment TUO 4 or SR 108 in Tuolumne County), with the exception for a two lane expressway between the Cities of Escalon and Oakdale. South of Yosemite Junction (Segment TUO 5) into The Park the Concept Facility for SR 120 will be a two lane expressway.

The freeway segments on SR 120 were built in the 1970s and meet current design criteria with the exception of the Yosemite and Guthmiller Interchange near the I-5 Interchange.¹⁰ The effort to replace the current interchange with the McKinley Avenue interchange, in part improves the spacing, with an eye to a reduction in weaving between McKinley Avenue Interchange and I-5.

Converting the developed portions of SR 120 along conventional highway segments to expressway appears infeasible unless a new alignment replaces the conventional highway. Access control would require set asides for frontage roads not currently envisioned in local land use planning. Access management could only be implemented in rural areas, and although targeting portions included in local spheres of influence for annexation by incorporated cities might reduce future congestion, does not appear an effective long term strategy.

Proposed Projects and Strategies

Caltrans current approach to the management of the SHS is to emphasize system preservation and maintenance. Capacity increasing projects are lower priorities, with the exception that partially and fully funded projects undertaken to stabilize future traffic volumes would permit successful implementation of this policy. District 10's priorities concerning capacity expansion or facility upgrades upon the SHS do not emphasize the SR 120 corridor. Of the efforts in the corridor, the expansion of the freeway facility to six lanes, programed to be completed by 2032; and the proposed bypass of the conventional highway segment in Manteca are the only modifications currently being considered. The need for a four lane expressway from SR 99 to SR 108 (Yosemite Junction) is currently not a priority, as there does not appear to be a substantial interregional work commute from communities on the corridor. Continued commuter mode shifts away from single occupancy vehicles, along with declines in working age populations in Tuolumne County may render such a future investment as short sighted.

However, the manner in which future interregional and local traffic circulation is handled by Stanislaus County; and how well efforts to reduce traffic congestion in The Park reduce recreational traffic during non-peak commute times may complicate how well the District addresses system preservation and maintenance for the corridor.

⁹ SJ COG RTP, Appendix F

¹⁰ The interchange accesses land uses consistent with light industrial, with a large number of transloading and trucking firms, and warehouses located to the north.

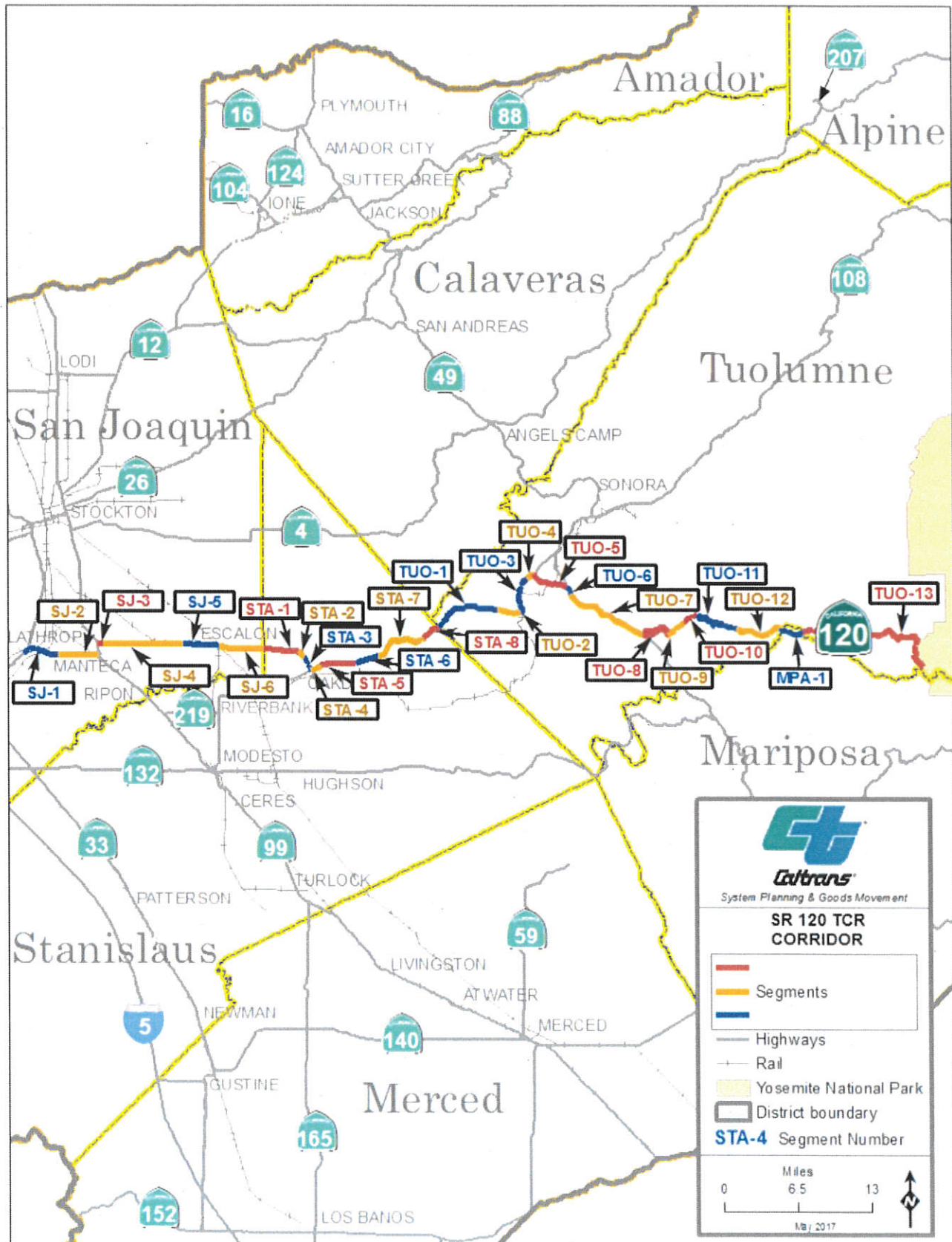
The City of Modesto, with a population of greater than 210,000, is the second largest city in District 10, but is only served by one north and south corridor (SR 99), and lacks expressway feeders that connect to the eastern housing developments (where most residential housing may be found). The distance of these developments from SR 99 suggest a second north and south expressway along the eastern fringe of the city to route commuters north to SR 120 may be in order.

At this time our office cannot assess the level that vehicle travel to The Park affects SR 120 during weekends, holidays, and other non-peak commute times. The lack of real time data due to the few VMS tied into the Performance Monitoring System (PeMS) along the corridor, and the lack of ones in locations best able to assess vehicle counts on the highways against those obtained at Park entrances prevent acquiring an accurate sense of how Park efforts to manage their congestion are working outside of The Park.

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

Route Segmentation			
Segment	Location Description	County_Route_Beg. PM	County_Route_End PM
SJ 1	I-5 to Airport Way (City of Lathrop)	SJ_120_R0.493	SJ_120_R3.323
SJ 2	Airport Way to SR 99 (City of Manteca)	SJ_120_R3.323	SJ_120_T7.145
SJ 3	SR 99 to Austin Road (City of Manteca)	SJ_-120_6.091	SJ_120_6.83
SJ 3	Austin Road to Brennan Road	SJ_120_6.83	SJ_120_15.86
SJ 4	Brennan Road to Campbell Road (City of Escalon)	SJ_120_15.86	SJ_120_18.179
SJ 5	Campbell Road to Stanislaus County Line	SJ_120_18.179	SJ_120_21.184
STA 1	San Joaquin County Line to Valley Home Road	STA_120_0.00	STA_120_3.16
STA 2	Valley Home Road to Rodden Road	STA_120_3.16	STA_120_3.79
STA 3	Rodden Road to SR 108 West(F Street) (City of Oakdale)	STA_120_3.79	STA_120_5.116
STA 4	SR 108 West (F Street) to Maag Road (City of Oakdale)	STA_120_5.116	STA_120_6.038
STA 5	Maag Road to Wamble Road	STA_120_6.038	STA_120_9.24
STA 6	Wamble Road to Lancaster Road	STA_120_9.24	STA_120_11.41
STA 7	Lancaster Road to Sonora Road	STA_120_11.41	STA_120_T18.17
STA 8	Sonora Road to Tuolumne County Line	STA_120_T18.17	STA_120_T18.61
TUO 1	Stanislaus County Line to Green Springs Road	TUO_120_R0.00	TUO_120_T6.960
TUO 2	Green Springs Road to La Grange Road (Route J 59)	TUO_120_T6.960	TUO_120_8.190
TUO 3	La Grange Road (Route J 59) to O'Byrnes Ferry Road	TUO_120_8.190	TUO_120_11.370
TUO 4	O'Byrnes Ferry Road to SR 108 East (Yosemite Junction)	TUO_120_11.370	TUO_120_12.077
TUO 5	SR 108 East (Yosemite Junction) to SR 49 North	TUO_120_12.077	TUO_120_15.516
TUO 6	SR 49 North to Shawmut Road (Chinese Camp)	TUO_120_15.516	TUO_120_T16.273
TUO 7	Shawmut Road to SR 49 South	TUO_120_T16.273	TUO_120_R23.897
TUO 8	SR 49 South to Upper Priest Grade Road	TUO_120_R23.897	TUO_120_29.26
TUO 9	Upper Priest Grade Road to Memorial Road (Big Oak Flat)	TUO_120_29.26	TUO_120_31.29
TUO 10	Memorial Road to East Feretti Road	TUO_120_31.29	TUO_120_32.55
TUO 11	East Feretti Road to Elmore Road	TUO_120_32.55	TUO_120_R38.62
TUO 12	Elmore Road to the Mariposa County Line	TUO_120_R38.62	TUO_120_R41.522
MPA 1	East Tuolumne County Line to West Tuolumne County Line (Buck Meadows)	MPA_120_R41.522	MPA_120_43.749
TUO 13	Mariposa County Line to Yosemite National Park Entrance	TUO_120_43.749	TUO_120_R56.510



ROUTE DESCRIPTION

The division of the SR 120 into homogeneous segments followed District 10's practice. Those segments conformed to land use planning boundaries, changes in population density (rural versus urban), change in facility, change in posted speed limits, and intersections with other SHS. Segmentation resulted in the creation of twenty seven segments-- five in San Joaquin County, eight in Stanislaus County, thirteen in Tuolumne County, and one in Mariposa County.

Within San Joaquin County (SJ) in various locations SR 120's facility varies from freeway, conventional highway, and expressway. Segments SJ 1 and SJ 2 conform to the freeway portion of SR 120, with Segment SJ 1's limits approximating the city limits of Lathrop, and Segment SJ 2 with the city limits of Manteca. Segment SJ 3 follows the four lane conventional highway extending from SR 99 to the eastern city limits of Manteca. Segment SJ 4 continues as a two lane conventional highway from the City of Manteca to the City of Escalon. Segment SJ 5 remains a two lane conventional highway through the City of Escalon. Segment SJ 6 from city limits of Escalon (Campbell Road) continues as a two lane expressway to the Stanislaus County line.

Within Stanislaus County (STA) SR 120 alternates between being expressway in the rural portions administered by the County of Stanislaus, and being conventional highway within the city limits of Oakdale, and again as expressway east of the City. Segment STA 1 runs from the San Joaquin County line to Valley Home Road as two lane expressway. Segment STA 2 continues as a two lane expressway to the city limits of Oakdale (near Rodden Road). Segment STA 3 is a four lane conventional highway with an intermittent two way left turn lane within the City of Oakdale between Rodden Road and 'F' Street (SR 108). Segment STA 4 continues as a four lane conventional highway with a two way left turn lane from 'F' Street to Maag Avenue. Segment STA 5 transitions from a four lane conventional highway to an expressway while retaining the two way left turn lane for much of its length (transitioning eastwards to left turn pockets) between Maag Avenue and Wamble Road. Segment STA 6 transitions to a four lane expressway between Wamble Road and Lancaster Road. Segment STA 7 functions as a two lane conventional highway in rolling terrain between Lancaster Road and Wilms Road. Segment STA 8 transitions from a two lane conventional highway to a four lane expressway to the Tuolumne County Line.

Through Tuolumne (TUE) and Mariposa (MPA) Counties, SR 120 performs as an expressway with the exception of the area of Big Oak Flat and Groveland. Segment TUE 1 provides a continuation of the four lane expressway in Stanislaus County near to the Green Springs Road intersection. Segment TUE 2 continues as a two lane expressway from Green Springs Road to La Grange Road (County Road J-59). Segment TUE 3 runs as a two lane expressway from La Grange Road (J-59) to the traffic signal at O'Byrnes Ferry Road. Segment TUE 5 extends the two lane expressway to Yosemite Junction where SR 120 diverges south from SR 108. Segment TUE 6 runs from Yosemite Junction to the SR 49 intersection near the town of Chinese Camp as two lane conventional highway. Segment TUE 7 acts as a conventional highway in the town of Chinese Camp between SR 49 and Shawmut Road. Segment TUE 8 performs as a two lane expressway from Shawmut Road to SR 49 at Moccasin. Segment TUE 9 marks the transition east of SR 49 from an STAA truck route while still expressway to the upper intersection with Old Priest Grade Road. Segment TUE 10 includes the two lane conventional highway that serves the town of Big Oak Flat between Old Priest Grade and Memorial Road. Segment TUE 11 continues as a two lane conventional highway through Groveland from Memorial Road to Feretti Road. As a two lane expressway, Segment TUE 12 runs from Feretti Road to the Mariposa County line near Buck Meadows. Segment MPA 1 extends from the Tuolumne County line to the Tuolumne County line as an expressway encompassing the rural village of Buck Meadows. The final segment, TUE 13 is a two lane expressway running from the Mariposa County line to The Park entrance.

Route Location:

The portion of SR 120 that accesses The Park is among the original routes in the SHS. Originating from Yosemite Junction, the highway continued through The Park over Tioga Pass and terminating at what is now US 395. In the 1930's the portion of SR 120 that extends west of Oakdale north of the Stanislaus River into Manteca where it intersected US 50 and US 99 (Yosemite Boulevard and Golden State Highway) was constructed. On the eastern end of the route, the highway was extended eastwards to intersect with US 6 at Benton Hotsprings. With the development of the Interstate system, the designation of US 50 was abandoned, and replaced by I-580, I-205, and I-5. The portion of US 50 that would have extended east of I-5 was changed to SR 120. In the 1970's this portion of conventional highway was replaced by the four lane freeway that formed the southern boundary of the Cities of Lathrop and Manteca. SR 120 comprises three distinct Legislative Routes: LR 40, from Yosemite Junction to The Park; LR 13, from the City of Oakdale at the intersection with F Street to Yosemite Junction; and LR 66, from I-5 to the City of Oakdale.

Route Purpose:

As one of two east to west freeways connecting I-5 and SR 99 in District 10, SR 120 supports the interregional work commute between both Stanislaus and San Joaquin Counties and the Bay Area. Developed land uses adjacent to the freeway segment provide warehousing and trucking operations emphasizing goods movement in proximity to the UP's intermodal facility on Roth Road. From the perspective of District 10, SR 120 east of SR 99 has a minor regional role in providing a work commute. However, viewed from the perspective of how SR 120 fits into the SHS, SR 120 provides recreational access to The Park from the Bay Area, an important interregional role.

Route Designations and Characteristics:

SR 120 is included in the IRRS, FES, and NHS for its entire extent. SR 120 complies with the Surface Transportation Assistance Act as a Terminal Access route between I-5 and SR 49 south (Segment TUO 7). East of SR 49 S to The Park, SR 120 is a California Legal Truck route. Aside from the freeway portion of the route, the corridor is not a significant goods movement route. SR 120 is not designated, but is eligible to be designated a State Scenic Highway for the portion between SR 49 north and SR 49 south. Local transportation planning is handled by the two MPOs—San Joaquin Council of Government (SJCOC) and Stanislaus Council of Governments (STAN COG); and the two Regional Transportation Planning Authorities—Tuolumne County Transportation Committee (TCTC) and Mariposa County Local Transportation Commission (MCLTC). Land use planning is carried out by various county or city planning agencies.

Designation or initiation of a managed lane network on the freeway facility is not expected until after the HY of 2040. Past shortfalls in addressing need along the portion of the corridor that feeds travelers into the Bay Area commute is an ideal candidate for upgrade to four multipurpose and two high occupancy vehicle lanes (HOV). As the lower property values in District 10 have attracted both Bay Area and Sacramento Area workers to live in the San Joaquin Valley, this resettlement has increased traffic volumes for the interregional commute from Stanislaus and San Joaquin Counties into both regions. This resettlement pattern creates a need for a seamless managed lane (HOV) network linked through SR 120 from both I-5 and SR 99.

Current District efforts to integrate portions of the ITS into an Integrated Corridor Management system includes the freeway portion of SR 120. A grant to fund a pilot study has been recently applied for, but the success of that endeavor is yet unknown.

ROUTE DESIGNATIONS & CHARACTERISTICS ¹¹									
Segment #	SJ 1	SJ 2	SJ 3	SJ 4	SJ 5	SJ 6	STA 1	STA 2	STA 3
FES	Yes								
NHS	Yes								
STRAHNET	No								
Scenic Highway	No								
IRRS	Yes								
Federal Functional Classification	Freeway		Other Principal Arterial						
Goods Movement Route	Yes								
Truck Designation	STAA: Terminal Access								
Rural/Urban/Urbanized	Urban			Rural					
MPO	SJ COG						STANCOG		
Local Agency	City of Lathrop	City of Manteca		SJ County	City of Escalon	SJ County	Stanislaus County		
Tribes	No federally recognized tribes								
Air District	SJVRAQCD								
Terrain	Flat								
ROUTE DESIGNATIONS & CHARACTERISTICS (CONTINUED)									
Segment #	STA 4	STA 5	STA 6	STA 7	STA 8	TUO 1	TUO2		
FES	Yes								
NHS	Yes								
STRAHNET	No								
Scenic Highway	No								
IRRS	Yes								
Federal Functional Classification	Conventional Highway			Expressway	Convention al Highway	Expressway			
Goods Movement Route	Yes								
Truck Designation	STAA: Terminal Access								
Rural/Urban/Urbanized	Urban			Rural					
MPO/RTPA	STAN COG					TCTC			
Local Agency	City of Oakdale			Stanislaus County			Tuolumne County		
Tribes	No federally recognized tribes					Tuolumne Band of Me-Wuk Indians			
Air District	SJVAQCD					TCAPCD			
Terrain	Flat				Rolling		Flat		

¹¹ Acronyms: NTN: National Truck Network; SJVRAQMD: San Joaquin Valley Air Quality District; TCAPCD: Tuolumne County Air Pollution Control District;MCAPCD: Mariposa County Air Pollution Control District

ROUTE DESIGNATIONS & CHARACTERISTICS (CONTINUED)									
Segment #	TUO 3	TUO 4	TUO 5	TUO 6	TUO 7	TUO 8	TUO 9	TUO 10	TUO 11
FES	Yes								
NHS	Yes								
STRAHNET	No								
Scenic Highway	No								
IRRS	Yes								
Federal Functional Classification	Other Principal Arterial								
Goods Movement Route	Yes			No					
Truck Designation	STAA: Terminal Access						California Legal Truck Advisory 30' KPR		
Rural/Urban/Urbanized	Rural								
MPO/RTPA	TCTC								
Local Agency	Tuolumne County								
Tribes	Tuolumne Band of Me-Wuk Indians, Chicken Ranch Rancheria of Me-Wuk Indians								
Air District	TCAPCD								
Terrain	Flat		Rolling				Mountainous	Rolling	

ROUTE DESIGNATIONS & CHARACTERISTICS (CONTINUED)				
Segment #	TUO 12	MPA 1	TUO 13	
FES	Yes			
NHS	Yes			
STRAHNET	No			
Scenic Highway	No			
IRRS	Yes			
Federal Functional Classification	Other Principal Arterial			
Goods Movement Route	No			
Truck Designation	California Legal Truck Advisory 30' KPR			
Rural/Urban/Urbanized	Rural			
MPO/RTPA	TCTC	MCLTC	TCTC	
Local Agency	Tuolumne County	Mariposa County	Tuolumne County	
Tribes	Tuolumne Band of Me-Wuk Indians, Chicken Ranch Rancheria of Me-Wuk Indians			
Air District	TCAPCD	MCAPCD	TCAPCD	
Terrain	Rolling			

COMMUNITY CHARACTERISTICS

Within District 10, SR 120 serves four incorporated cities—Lathrop (population 19,626), Manteca (population 71,948), Escalon (population 7,254), and Oakdale (population 21,469); and, two towns—Chinese Camp (population 126);¹² and the contiguous communities of Big Oak Flat and Groveland (population 3,388 for 2000, 601 for 2010).¹³ Only in the town of Big Oak Flat and Groveland would SR 120 be considered a ‘Main Street’.¹⁴ The ethnic composition for the Cities of Escalon and Oakdale, along with Big Oak Flat and Groveland is predominantly white, while for the Cities of Lathrop and Manteca are a more ethnically diverse population—Lathrop is characterized by large contingent of Asians (primarily Filipino) and Hispanics or Latinos with blacks comprising a percentage close to 7 per cent; with Manteca having a lower representation of Asians as part of its population, with the residual comprised of other ethnicities, with nearly the same representation by individuals who indicate an Hispanic or Latino background. For all cities and towns, there does not appear to be a great disparity between households by income except for a higher percentage of households outside of Lathrop and Manteca appear to be in poverty.

SELECT DEMOGRAPHIC COMPARISON BETWEEN CITIES AND TOWNS ALONG SR 120 (2006-2010) ¹⁵								
	Percentage of Population that is white	Percentage of Population that is black	Percentage of Population that is Asian	Percentage of Population that is Native American	Percentage of Population that is Hispanic or Latino	Households below Poverty Line	Lower Class Households not in Poverty	Middle Class and Upper Class Households ¹⁶
Lathrop	42 %	7.2%	22.0%	1.0%	42.6%	7.6%	11.2%	81.2%
Manteca	49.6%	9.8%	12.1%	1.1%	43.4%	8.4%	7.8%	83.8%
Escalon	81.6%	0.4%	1.3%	1.1%	27.0%	12.1%	3.4%	84.6%
Oakdale	80.1%	0.8%	2.2%	1.0%	26.1%	10.4%	7.5%	82.2%
Big Oak Flat and Groveland	90.2%	0.3%	1.5%	1.5%	8.2%	13.9%	0.0%	86.1%

LAND USE

Throughout its route, SR 120 is a patchwork of highway segments with traffic volumes that meet or exceed the facility’s capacity. Outside of developed areas, acquisition of additional right of way to allow for expansion of capacity is available, depending upon the relevant general plan’s land use designations and set asides. The freeway portion adjacent to the Cities of Lathrop and Manteca appears to have sufficient right of way to permit expansion of an additional lane. The City of Escalon performs as a substantial bottleneck where consideration of a proposed bypass recommended in previous RTPs might merit it again. The proposed North County Corridor might assist in bypassing the City of Oakdale in a similar manner.

Due to its rural nature, the SR 120 corridor in District 10 lacks the population density expected for the implementation of Smart Mobility efforts. Effort might be given to develop an interregional transit service connecting the Cities of Sonora and Oakdale to the centers of employment in Stanislaus and San Joaquin Counties, which would also require inclusion of SR 108 and SR 219.

¹² US Census 2010; the inclusion of Chinese Camp is only for completeness, and is not addressed further because of its small size and relative homogeneity.

¹³ Big Oak Flat and Groveland were a Census Designated Place in 2000, for the 2010 census only Groveland was enumerated with a population of 601 compared to 3,388 for the 2000 census that includes both places.

¹⁴ Escalon’s actual Main Street, and SR 108 in Oakdale function as ‘Main Streets’ for those two places.

¹⁵ CTPP 2006-2010 with the exception of Groveland Census Designated Place.

¹⁶ Middle class income is defined at 150% over or above of the federal poverty line

SR 120 intersects seven land use planning jurisdictions. Capacity expansion or facility upgrade to expressway would require at grade highway intersections at intervals of two miles with access control everywhere else along the highway. Adjoining residences and business would access the highway by parallel frontage roads converging at the at grade intersections. Local land use planning would need to reflect this need. Review of General Plans indicate the San Joaquin County General Plan recognizes the future expressway facility in its characterization of SR 120.¹⁷ The Tuolumne County General Plan recognizes SR 120 as a Principal Arterial but does not specify the nature of the facility.¹⁸ The Stanislaus County General Plan reports SR 120 between Valley Home Road and the Tuolumne County line as a minor Arterial, and does not specify the corridor as being expressway as it does two other facilities (SR 132 and North County Corridor).¹⁹ Land use maps for the three general plans were not consulted, but given the heterogeneity of treatment of the corridor, future land uses for expressway upgrade and expansion are not anticipated to be consistently applied.

LAND USE	
Segment	Place Type ²⁰
SJ 1	4c—Dedicated Use Areas
SJ 2	4c—Dedicated Use Areas
SJ 3	4b—Corridors
SJ 4	5b—Rural Settlements and Agricultural Lands
SJ 5	4a--Centers
SJ 6	5b—Rural Settlements and Agricultural Lands
STA 1	5b—Rural Settlements and Agricultural Lands
STA 2	5b—Rural Settlements and Agricultural Lands
STA 3	4d--Neighborhoods
STA 4	4d--Neighborhoods
STA 5	5b—Rural Settlements and Agricultural Lands
STA 6	5b—Rural Settlements and Agricultural Lands
STA 7	5b—Rural Settlements and Agricultural Lands
STA 8	5b—Rural Settlements and Agricultural Lands
TUO 1	5b—Rural Settlements and Agricultural Lands
TUO 2	5b—Rural Settlements and Agricultural Lands
TUO 3	5b—Rural Settlements and Agricultural Lands
TUO 4	5b—Rural Settlements and Agricultural Lands
TUO 5	5b—Rural Settlements and Agricultural Lands
TUO 6	5a—Rural towns
TUO 7	5b—Rural Settlements and Agricultural Lands
TUO 8	5b—Rural Settlements and Agricultural Lands
TUO 9	5a—Rural towns
TUO 10	5a—Rural towns
TUO 11	5b—Rural Settlements and Agricultural Lands
TUO 12	6 – Special Use
MPA 1	5b—Rural Settlements and Agricultural Lands
TUO 13	6 – Special Use

¹⁷ San Joaquin General Plan, (2010) Volume III p. II-C 10.

¹⁸ Tuolumne County General Plan (Draft 2015) pp. 2.1-2.14

¹⁹ Stanislaus General Plan (2016) pp. II-4 - II-11

²⁰ Land use designations taken from the Smart Mobility Framework (2012), the lower the number for the place type, the greater the suitability for SMART mobility development.

SYSTEM CHARACTERISTICS

The SR 120 corridor is variable in its highway characteristics—the facility consists of a freeway, conventional highway within cities and towns, and expressway and conventional highway in the rural areas. Lane configuration varies from four lanes to two, regardless of the facility. Expansion of the freeway facility from four lanes to six lanes is expected within the period of this report, with possible conversion of the two multiple use lanes into HOV before the HY. Urban conventional highways are unlikely to be widened to include additional lanes, but bypassed by new expressways around Manteca, Escalon, and Oakdale. Given topographic constraints it is unclear how a bypass of the Big Oak Flat and Groveland townscape is possible. The rural portion of the highway should be upgraded to expressway by the horizon year of 2040, with widening to four lanes for the portion of SR 120 between Manteca and Yosemite Junction (where SR 108 continues east into the City of Sonora as a four lane expressway) and retaining a two lane configuration southwards to The Park. Aside from the freeway portion, the future facility should be upgraded to expressway throughout.

Components of Caltrans' ITS (VMS; HAR; Changeable Message Signs, CMS; Closed Circuit Television, CCTV; and Roadside Weather Information Systems, RWIS) are present along the freeway portion of SR 120 but lacking throughout the portion of SR 120 east of SR 99. Few additions and upgrades are anticipated for the facility by 2040. The pattern is the same with the distribution of real time traffic condition detection stations with read outs available on PeMS for the freeway facility but only two stations reporting for the portion of SR 120 east of SR 99 with all found in Tuolumne County.²¹

²¹ The Tuolumne County RTP contains an item for additional CMS but is not location specific.

SYSTEM CHARACTERISTICS ²²								
Segment #	SJ 1	SJ 2	SJ 3	SJ 4	SJ 5	SJ 6	STA 1	STA 2
Existing Facility								
Facility Type	Freeway		Highway	Expressway	Highway	Expressway		
General Purpose Lanes	Four			Two				
Lane Miles	11.32	14.86	1.478	18.06	3.95	6.01	6.32	1.26
Centerline Miles	2.83	3.715	0.739	9.03	1.975	3.005	3.16	0.63
Auxiliary Lanes	None							
20-25 Year Concept Facility								
Facility Type	Freeway		Expressway					
General Purpose Lanes	Six		Four		Two			
Lane Miles	16.98	22.29	2.956	36.12	3.95	6.01	6.32	1.26
Centerline Miles	2.83	3.715	0.739	9.03	1.975	3.005	3.16	0.63
Aux Lanes	None							
Post 25 Year Facility								
Facility Type	Freeway		Expressway					
General Purpose Lanes	Six		Four					
Lane Miles	16.98	22.29	2.956	36.12	7.9	12.02	12.64	2.52
Centerline Miles	2.83	3.715	0.739	9.03	1.975	3.005	3.16	0.63
HOV Lanes	Two		None					
Aux Lanes	None							
TMS Elements								
TMS Elements (2017)	VMS	VMS		VMS		VMS		
	CMS	CMS		CMS				
	CCTV	CCTV						
	RWIS	RWIS						
TMS Elements (2040)								

²² Acronyms--VMS: Vehicle Monitoring Station; CMS: Changeable Message Sign; CCTV: Closed Circuit Television; RWIS: Roadside Weather Information Station; HAR: Highway Advisory Radio; FB: Flashing Beacon

SYSTEM CHARACTERISTICS (CONTINUED)								
Segment #	STA 3	STA 4	STA 5	STA 6	STA 7	STA 8	TUO 1	TUO 2
Existing Facility								
Facility Type	Highway			Expressway	Highway	Expressway		
General Purpose Lanes	Two			Four	Two	Four		Two
Lane Miles	2.652	1.844	6.404	8.68	8.612	0.588	23.408	4.1282
Centerline Miles	1.326	0.922	3.202	2.17	4.306	0.147	5.852	2.064
Auxiliary Lanes	None							
20-25 Year Concept Facility								
Facility Type	Expressway							
General Purpose Lanes	Four							
Lane Miles	5.304	3.688	12.808	8.68	17.224	0.588	23.408	8.256
Centerline Miles	1.326	0.922	3.202	2.17	4.306	0.147	5.852	2.064
Aux Lanes	None						Yes	None
Post 25 Year Facility								
Facility Type	Expressway							
General Purpose Lanes	Four							
Lane Miles	5.304	3.688	12.808	8.68	17.2242	0.588	23.408	8.256
Centerline Miles	1.326	0.922	3.202	2.17	4.306	0.147	5.852	2.064
HOV Lanes	None							
Aux Lanes	None						Yes	None
TMS Elements								
TMS Elements (2017)	VMS	VMS	VMS					VMS
			CMS					
TMS Elements (2040)							VMS	

SYSTEM CHARACTERISTICS (CONTINUED)								
Segment #	TUO 3	TUO 4	TUO 5	TUO 6	TUO 7	TUO 8	TUO 9	TUO 10
Existing Facility								
Facility Type	Expressway			Highway		Expressway		Highway
General Purpose Lanes	Two							
Lane Miles	6.36	1.414	6.878	1.472	14.84	10.002	4.06	2.52
Centerline Miles	3.18	0.707	3.439	0.736	7.42	5.001	2.03	1.26
Auxiliary Lanes	None							
20-25 Year Concept Facility								
Facility Type	Expressway							
General Purpose Lanes	Four			Two				
Lane Miles	12.72	2.828	13.7568	1.472	14.84	10.002	4.06	2.52
Centerline Miles	3.18	0.707	3.439	0.736	7.42	5.001	2.03	1.26
Aux Lanes	None							
Post 25 Year Facility								
Facility Type	Expressway							
General Purpose Lanes	Four			Two				
Lane Miles	12.72	2.828	13.7568	1.472	14.84	10.002	4.06	2.52
Centerline Miles	3.18	0.707	3.439	0.736	7.42	5.001	2.03	1.26
HOV Lanes	None							
Aux Lanes	None							
TMS Elements								
TMS Elements (BY)	FB	VMS	CMS	VMS	VMS	VMS	VMS	
				FB	CMS		RWIS	
							FB	
							CMS	
TMS Elements (HY)								

SYSTEM CHARACTERISTICS (CONTINUED)				
Segment #	TUO 11	TUO 12	MPA 1	TUO 13
Existing Facility				
Facility Type	Highway			
General Purpose Lanes	Two			
Lane Miles	11.27	6.204	4.382	24.954
Centerline Miles	5.635	3.102	2.91	12.477
Auxiliary Lanes	None			
20-25 Year Concept Facility				
Facility Type	Expressway			
General Purpose Lanes	Two			
Lane Miles	11.27	6.204	4.382	24.954
Centerline Miles	5.635	3.102	2.91	12.477
Aux Lanes	None			
Post 25 Year Facility				
Facility Type	Expressway			
General Purpose Lanes	Two			
Lane Miles	11.27	6.204	4.382	24.954
Centerline Miles	5.635	3.102	2.91	12.477
HOV Lanes	None			
Aux Lanes	None			
TMS Elements				
TMS Elements (BY)		VMS	CMS	
			FB	
TMS Elements (HY)				TMS

BICYCLE FACILITY

The bicycle corridor affiliated with SR 120 remains underdeveloped. Bicycles have restricted access to the freeway portion in Lathrop and Manteca (Segments SJ 1 and SJ 2); and throughout the route east of SR 99 the bicycle facility is a shared travel lane facility. No parallel bicycle facilities exist near the freeway corridor, and the local planning in the cities that SR 120 traverses elected to locate local bicycle routes more than a quarter mile away from the state highway with the exception of the City of Escalon. Upgrading the corridor to a Class III shared lane facility would require widening shoulders to eight feet, but the bicycle facility would remain deficient. The minimal recommended future facility is a Class IV bicycle lane.²³ The DSMP outlined planned bicycle facilities parallel but outside the SR 120 corridor as a potential interregional bicycle route connecting the Bay Area to The Park.²⁴ Abandoned railroad grades, logging railroads, and highway segments may provide future right of way for bicycle and pedestrian paths.

BICYCLE FACILITY				
Segment	State Bicycle Facility			Parallel Bicycle Facility
	Post Mile ²⁵	Location	Bicycle Access Prohibited	Parallel Facility Present
SJ 1	SJ_120_R0.493/ SJ_120_R3.323	I-5 to Airport Way (City of Lathrop)	Yes	No
SJ 2	SJ_120_R3.323/ SJ_120_T7.145	Airport Way to SR 99 (City of Manteca)	Yes	No
SJ 3	SJ_120_6.091/ SJ_120_6.83	SR 99 to Austin Road (City of Manteca)	No	No
SJ 4	SJ_120_6.83/ SJ_120_15.86	Austin Road to Brennan Road	No	No
SJ 5	SJ_120_15.86/ SJ_120_18.17	Brennan Road to Campbell Road (City of Escalon)	No	No
SJ 5.1	SJ_120_R16.748/ SJ_120_17.300	Plaza Avenue to Sacramento Street (Class II)	No	No
SJ 5.2	SJ_120_16.375/ SJ_120_R16.922	West of Mc Henry Avenue to Main Street (Class II)	No	No
SJ 6	SJ_120_18.17/ SJ_120_21.18	Campbell Road to Stanislaus County Line	No	No
STA 1	STA_120_0.00/ STA_120_3.1	San Joaquin County Line to Valley Home Road	No	No
STA 2	STA_120_3.1/ STA_120_3.7	Valley Home Road to Rodden Road	No	No
STA 3	STA_120_3.7/ STA_120_5.11	Rodden Road to SR 108 West('F' Street) (City of Oakdale)	No	No
STA 4	STA_120_5.11/ STA_120_6.03	SR 108 West ('F' Street) to Maag Road (City of Oakdale)	No	No
STA 5	STA_120_6.03/ STA_120_9.24	Maag Road to Wamble Road	No	No
STA 6	STA_120_9.24/ STA_120_11.41	Wamble Road to Lancaster Road	No	No
STA 7	STA_120_11.41/ STA_120_T18.02	Lancaster Road to Sonora Road	No	No
STA 8	STA_120_T18.02/ STA_120_18.16	Sonora Road to Tuolumne County Line	No	No
TUO 1	TUO_120_R0.00/ TUO_120_T6.96	Stanislaus County Line to Green Springs Road	No	No
TUO 2	TUO_120_T6.960/ TUO_120_8.19	Green Springs Road to La Grange Road (Route J 59)	No	No
TUO 3	TUO_120_8.190/ TUO_120_11.37	La Grange Road (Route J 59) to O'Byrnes Ferry Road	No	No
TUO 4	TUO_120_11.37/ TUO_120_12.08	O'Byrnes Ferry Road to SR 108 East (Yosemite Junction)	No	No
TUO 5	TUO_120_12.08/ TUO_120_15.53	SR 108 East (Yosemite Junction) to SR 49 North	No	No
TUO 6	TUO_120_15.53/ TUO_120_T16.27	SR 49 North to Shawmut Road (Chinese Camp)	No	No
TUO 7	TUO_120_T16.27/ TUO_120_R239	Shawmut Road to SR 49 South	No	No
TUO 8	TUO_120_R23.9/ TUO_120_29.26	SR 49 South to Upper Priest Grade Road	No	No
TUO 9	TUO_120_29.26/ TUO_120_31.29	Upper Priest Grade Road to Memorial Road (Big Oak Flat)	No	No
TUO 10	TUO_120_31.29/ TUO_120_32.55	Memorial Road to East Feretti Road	No	No

²³ Although a Class II bicycle lane will address need in lower traffic volume segments, a uniform continuous facility is recommended in the Highway Design Manual. A Class I may require greater right of way acquisition and allocation than might be feasible in the corridor.

²⁴ District 10 DSMP, 2015, p. 70.

²⁵ For formatting purposes, some of the post miles were rounded up.

BICYCLE FACILITY (CONTINUED)				
Segment	State Bicycle Facility			Parallel Bicycle Facility
	Post Mile	Location	Bicycle Access Prohibited	Parallel Facility Present
TUO 11	TUO_120_32.55/TUO_120_R38.62	East Feretti Road to Elmore Road	No	No
TUO 12	TUO_120_R38.62/TUO_120_R41.5	Elmore Road to the Mariposa County Line	No	No
MPA 1	MPA_120_R41.5/MPA_120_R43.75	East Tuolumne County Line to West Tuolumne County Line (Buck Meadows)	No	No
TUO 13	TUO_120_43.75/TUO_120_R56.1	Mariposa County Line to Yosemite National Park Entrance	No	No

PEDESTRIAN FACILITY

Pedestrian facilities are limited to conventional highway facilities within urban settings on SR 120. These are limited to the Cities of Manteca, Escalon and Oakdale; and the contiguous towns of Big Oak Flat and Groveland. The pedestrian facilities in each of these four places are incomplete. Generally these places do not have sidewalks on both sides of the streets and have gaps where there is no sidewalk, access ramps are lacking or do not meet current American with Disabilities Act standards, and street crossings are lacking. The characteristics of each community are discussed under the heading 'Active Transportation' below (p. 34).

PEDESTRIAN FACILITY					
Segment	Post Mile	Location Description	Ped. Access Prohibited	Sidewalk Present	Status
S J 1	SJ_120_R0.493/SJ_120_R3.323	I-5 to Airport Way (City of Lathrop)	Yes		
S J 2	SJ_120_R3.323/SJ_120_T7.145	Airport Way to SR 99 (City of Manteca)	Yes		
S J 3	SJ_120_6.091/SJ_120_6.83	SR 99 to Austin Road (City of Manteca)	No	Yes	Complete on south shoulder, partial for north shoulder, crosswalks at signals, ramps present
S J 4	SJ_120_6.83/SJ_120_15.86	Austin Road to Brennan Road	No	No	
S J 5	SJ_120_15.86/SJ_120_18.17	Brennan Road to Campbell Road (City of Escalon)	No	Yes	Partial—Mc Henry Avenue east to Paddick Mobile Home Park, crosswalks and ramps present
S J 6	SJ_120_18.17/SJ_120_21.18	Campbell Road to Stanislaus County Line	No	No	
STA 1	STA_120_0.00/STA_120_3.1	San Joaquin County Line to Valley Home Road	No	No	
STA 2	STA_120_3.1/STA_120_3.7	Valley Home Road to Rodden Road	No	No	
STA 3	STA_120_3.7/STA_120_5.11	Rodden Road to SR 108 West(F Street) (City of Oakdale)	No	Yes	Partial—sidewalk on west shoulder, crosswalks at intersections, ramps not present at all crosswalks
STA 4	STA_120_5.11/STA_120_6.03	SR 108 West (F Street) to Maag Road (City of Oakdale)	No	Yes	Complete on both shoulders, crosswalks at intersections and mid-block, ramps present
STA 5	STA_120_6.03/STA_120_9.24	Maag Road to Wamble Road	No	No	
STA 6	STA_120_9.24/STA_120_11.41	Wamble Road to Lancaster Road	No	No	
STA 7	STA_120_11.41/STA_120_T18.017'	Lancaster Road to Sonora Road	No	No	
STA 8	STA_120_T18.017/STA_120_18.16	Sonora Road to Tuolumne County Line	No	No	
TUO 1	TUO_120_R0.00/TUO_120_T6.960	Stanislaus County Line to Green Springs Road	No	No	
TUO 2	TUO_120_T6.960/TUO_120_8.190	Green Springs Road to La Grange Road (Route J 59)	No	No	
TUO 3	TUO_120_8.190/TUO_120_11.370	La Grange Road (Route J 59) to O'Byrnes Ferry Road	No	No	
TUO 4	TUO_120_11.370/TUO_120_12.077	O'Byrnes Ferry Road to	No	No	

		SR 108 East (Yosemite Junction)			
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PEDESTRIAN FACILITY (CONTINUED)					
Segment	Post Mile	Location Description	Ped. Access Prohibited	Sidewalk Present	Location
TUO 5	TUO_120_12.077/TUO_120_15.516	SR 108 East (Yosemite Junction) to SR 49 North	No	No	
TUO 6	TUO_120_15.516/TUO_120_T16.273	SR 49 North to Shawmut Road (Chinese Camp)	No	No	
TUO 7	TUO_120_T16.273/TUO_120_R23.897	Shawmut Road to SR 49 South	No	No	
TUO 8	TUO_120_R23.897/TUO_120_29.26	SR 49 South to Upper Priest Grade Road	No	No	
TUO 9	TUO_120_29.26/TUO_120_31.29	Upper Priest Grade Road to Memorial Road (Big Oak Flat)	No	No	
TUO 10	TUO_120_31.29/TUO_120_32.55	Memorial Road to East Feretti Road	No	Yes	Partial, Powderhouse Street to Back Street; no ramps, two crosswalks
TUO 11	TUO_120_32.55/TUO_120_R38.62	East Feretti Road to Elmore Road	No	No	
TUO 12	TUO_120_R38.62/TUO_120_R41.522	Elmore Road to the Mariposa County Line	No	No	
MPA 1	MPA_120_R41.522/MPA_120_R43.749	East Tuolumne County Line to West Tuolumne County Line (Buck Meadows)	No	No	
TUO 13	TUO_120_43.749/TUO_120_R56.510	Mariposa County Line to Yosemite National Park Entrance	No	No	

TRANSIT FACILITY

Transit service within the SR 120 corridor is spotty. There is no commuter rail service, and year round bus service is a single transit stop in City of Manteca at Pestana and SR 120 on Manteca Transit Route 1; and a single stop in City of Oakdale at the K-Mart stop at SR 120 ('F' Street) and Maag on the Stanislaus Regional Transit Route 60. Intermittent seasonal transit service on Yosemite Area Regional Transit System (YARTS) is available from Yosemite Junction into The Park between the Months of May and September, and varies from once a day to three times a day. The development of a safety roadside rest facility at Yosemite Junction (Segment TUO 4) might be also employed as a park and ride accessing both YARTS and future interregional transit originating from the Sonora and Jamestown area.

East from Oakdale, SR 120 follows two railroads. Oakdale serves as the western terminus of the Sierra Railroad, a logging railroad accessing much of the pine forest in Tuolumne County. Diverging from the Sierra Railroad at Hetch Hetchy Junction was the Hetch Hetchy Railroad that operated between 1917 and 1949, providing a route to provision supplies for the construction of O'Shaughnessy Dam in The Park. Passengers could travel from the Bay Area to The Park by the Atchison, Topeka, and Santa Fe Railroad (now the BNSF) to the Hetch Hetchy reservoir, and depart by carriage to Yosemite Valley. Consideration might be given to developing the abandoned rights of way for transit or bicycle purposes.

TRANSIT FACILITY ²⁶						
Segment(s)	Mode & Collateral Facility	Name	Route End Points	Headway (Hrs.)	Operating Period	Bikes Allowed on Transit
SJ1 and SJ 2	Commuter Bus	SJ RTD	Stockton	10	Weekday	Yes
		MAX	Modesto	10	Weekday	Yes
SJ 3	Traditional Bus	Manteca Transit Route 1	Manteca Transit loop	12	M-Sat	Yes
SJ 4 through STA 3	None					
STA 4	Commuter Bus	StaRT 60	Modesto Transit Center to Oakdale		M-Sat.	Yes
STA 5-TUO 13	None					

FREIGHT

Much of the goods movement activity on SR 120 is limited to the freeway portion of the route. Between I-5 and SR 99, SR 120 is designated a Terminal Access Truck Route (TA) consistent with the provisions of the Surface Transportation Assistance Act (STAA). Although SR 120 retains the TA designation for the portion between SR 99 and SR 49 S at Moccasin, there are no substantial connecting truck routes, freight terminals, intermodal facilities, or warehouses along SR 120 with the exception of the industrial businesses and operations alongside the BNSF spur in Oakdale on segment STA 3, and the lumber mill on segment TUO 6. Beyond SR 49 S, SR 120 is a California Truck Advisory route, with the terminus at The Park where no trucks are permitted. There is little rail or air freight within the corridor.

Rail freight has a significant role in the corridor, as both the Class I BNSF and Class III Sierra Railroads cross SR 120. Combined, the two railroads create four at grade crossings at French Camp Road, Escalon-Belotta Road and McHenry Avenue, 'F' Street, and, between Yosemite Junction and Chinese Camp near Enterprise Drive. There are no proposed projects to develop grade separations at these locations. From a highway operations perspective there may be a need for one at Escalon-Belotta Road and McHenry Avenue, but the expense may not be warranted.

²⁶ Acronyms: StaRT Stanislaus Rapid Transit; MAX, Modesto Area Transit; and , SJ RTD San Joaquin County Rapid Transit District.

ENVIRONMENTAL CONSIDERATIONS

Part of the effort to upgrade and construct transportation facilities is compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Any project undertaken on a highway facility must comply with these two laws, with the result that any environmental impact be avoided, mitigated, or minimized. In the case of expanding highway capacity, often additional right of way needs to be acquired to accommodate the expansion or improvement. For SR 120 with the designation of the six lane freeway concept facility, expansion can be addressed within the existing right of way and would avoid significant expenditures of time and money addressing environmental impacts other than noise and air quality.²⁷ For capacity increasing projects on segments with a four lane expressway concept facility or a two lane expressway with passing lanes concept facility, significant expenditures of time and money addressing environmental impacts could be incurred. This would not apply to any segments presently built to the four lane expressway concept facility, or Segments SJ 6, STA 1, and STA 2, which do not require additional capacity before 2040.

With any capacity expansion there is a high risk of encountering environmental resources. With the proposed expansion of the facility to four lanes (between Manteca and Yosemite Junction) resources include vernal pools, prehistoric and historic cultural resources, loss of prime agricultural lands, wetlands, and sensitive biological resources. With the proposed addition of passing lanes there occurs an additional impact due to naturally occurring asbestos between Yosemite Junction and The Park.

Although environmental justice remains a pervasive issue in District 10, the SR 120 corridor does not have the concerns that are evident in other corridors in District 10. There are few indications of impacts related to past highway construction projects falling disproportionately upon the disadvantaged, and all of the communities served by SR 120 appear racially and ethnically homogenous, with populations dominated by non-latino whites.

The affect climate change may have on SR 120 appears minimal—the freeway is above sea level, and possesses some resilience due to having an elevated route with reduced exposure to the anticipated increase in the frequency and intensity of floods. Flood events would be limited in impact to areas near river crossings (the City of Oakdale). Scour beneath bridges would remain a concern, although this need has been addressed by a bridge monitoring and maintenance system. An increase in the rate and intensity of earth movement such as mass wasting, landslides, and slumps may arise upon the route between Yosemite Junction and The Park, in particular upon the New Priest Grade (Segment TUO 7) or in areas affected by the Rim Fire (Segments TUO 11 through 13 and Segment MPA 1).

²⁷ This only applies to right of way acquired after NEPA and CEQA were implemented. Unmitigated impacts from previous undertakings would render this general risk assessment in error.

ENVIRONMENTAL SCAN																																					
Segment	Cultural Resources	Floodplain	Hazardous Materials	Air Quality			Waters and Wetlands	Special Status Species																													
				Ozone	Particulate Matter				Carbon Monoxide																												
					2.5	10																															
SJ 1	High	None	Moderate	Non-attainment	Non-attainment	Maintenance / Attainment	Maintenance / Attainment	Moderate	Moderate																												
SJ 2			Low																																		
SJ 3	Moderate																																				
SJ 4	Moderate																																				
SJ 5			Low					Low																													
SJ 6			Moderate					Moderate	Low																												
STA 1		Low																																			
STA 2	High	Within 100 year flood plain	Low					Non-attainment	Maintenance / Attainment	Maintenance / Attainment	Moderate	Moderate																									
STA 3																																					
STA 4	Moderate	None									Moderate	Non-attainment 1 hour Ozone Standard	Non-attainment	Unclassified	Maintenance / Attainment	Low	Low																				
STA 5																		Low	Moderate																		
STA 6	High															Within 100 year flood plain	Moderate	Non-attainment 1 hour Ozone Standard	Non-attainment	Unclassified	Maintenance / Attainment	High	High														
STA 7				None	Low	Moderate	Moderate																	Moderate													
STA 8			None																			Low	Moderate		Moderate	Moderate											
TUO 1																											None	Low	Moderate	Moderate	Moderate						
TUO 2											None																					Low	Moderate	Moderate	Moderate		
TUO 3																																				None	Low
TUO 4	None															Low	Moderate																				
TUO 5				None	Low	Moderate	Moderate																	Moderate													
TUO 6			None					Low	Moderate	Moderate												Moderate															
TUO 7																							None		Low	Moderate	Moderate	Moderate									
TUO 8		None									Low	Moderate	Moderate	Moderate																							
TUO 9															None														Low	Moderate	Moderate	Moderate					
TUO 10	None															Low	Moderate	Moderate	Moderate																		
TUO 11				None	Low	Moderate	Moderate													Moderate																	
TUO 12			None					Low	Moderate	Moderate											Moderate																
MPA 1																						None	Low	Moderate	Moderate	Moderate											
TUO 13		None									Low	Moderate	Moderate	Moderate																							

CORRIDOR PERFORMANCE

Corridor performance for SR 120 reflects a dichotomy between the freeway portion (Segments SJ 1 and 2) and the conventional highway or expressway portion exhibited by all other segments. The two freeway segments appear similar in traffic volumes, although there is a slight diminution in both vehicle volumes and truck volumes at SR 99. This pattern should be expected given the number of trucking firms and warehousing off SR 120 in Lathrop, and truck service routes likely with Bay Area locations as trip origins or destinations. Although there is a gradual reduction in traffic volumes going east towards The Park from SR 99, the highest volumes reported on SR 120 on this portion occur in the Cities of Manteca and Oakdale.

CORRIDOR PERFORMANCE ²⁸						
Segment #	SJ 1	SJ 2	SJ 3	SJ 4	SJ 5	SJ 6
Basic System Operations						
AADT (BY) ²⁹	85500	79500	26500	14000	16000	11500
AADT (HY)	151500	137000	44300	20500	21500	15000
VMT (BY)	241965	295342	19584	126420	31600	34558
VMT (HY)	428745	508955	32738	185115	424628	45075
Daily Vehicle Hours of Delay (35 MPH) (BY)	Data unavailable		No Detection			
Truck Traffic						
Total Average Annual Daily Truck Traffic (AADTT) (BY)	15732	16616	3896	1589	1817	920
Total Trucks (% of AADT) (BY)	18.40%	20.90%	14.70%	11.35%	11.36%	8.00%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	11484	12129	2844	1160	1326	672
5+Axle Trucks (as% of AADT) (BY)	13.43%	15.26%	10.73%	8.29%	8.29%	5.84%
Bottlenecks Data						
Bottleneck Existing:	Information Unavailable					
Peak Hour Traffic Data						
Peak Period Length	Information Unavailable					
Peak Hour Direction:						
Peak Hour Time of Day						
Peak Hour VMT (BY):	22987	28058	1860	12642	3002	3459
Peak Hour VMT (HY):	40731	48351	3110	18512	4038	4508
Peak Hour Avg. Speed ³⁰ (mph)(BY):			N/A	42.2	39.1	45.3
Peak Hour Vehicle Hours of Delay (35mph) (BY)	Data unavailable		No Detection			
Peak Hour Vehicle Hours of Delay (35mph) (HY)	Information unavailable					

²⁸ Acronyms—AADT: Average Annual Daily Traffic; AADTT: Average Annual Daily Truck Traffic; VMT: Vehicle Miles Traveled

²⁹ Traffic volumes for Segment SJ 1 corrected to reflect percentages from 1990 that better reflect current observed patterns.

³⁰ Travel speed not available (N/A) for signalized segments.

CORRIDOR PERFORMANCE (CONTINUED)						
Segment #	STA 1	STA 2	STA 3	STA 4	STA 5	STA 6
Basic System Operations						
AADT (BY)	11500	21500	22500	23000	18500	16000
AADT (HY)	15000	30000	31000	27500	24500	24500
VMT (BY)	36340	13545	29835	21206	59237	35262.5
VMT (HY)	47400	18900	41106	25355	78449	53165
Daily Vehicle Hours of Delay (35 MPH) (BY)	No Detection					
Truck Traffic						
Total Average Annual Daily Truck Traffic (AADTT) (BY)	1803	3083	2925	1610	1737	1526
Total Trucks (% of AADT) (BY)	15.68%	14.34%	13.00%	7.00%	9.39%	9.39%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	1316	2251	2135	1175	1268	1114
5+Axle Trucks (as % of AADT) (BY)	11.45%	10.47%	9.49%	5.11%	6.85%	6.85%
Bottlenecks Data						
Bottleneck Existing:	Information Unavailable					
Peak Hour Traffic Data						
Peak Period Length	Information Unavailable					
Peak Hour Direction:						
Peak Hour Time of Day						
Peak Hour VMT (BY):	3634	1219	2685	2015	5924	3526
Peak Hour VMT (HY):	4740	1701.0	3700	2409	7845	5316
Peak Hour Avg. Speed (mph)(BY):	47	577	N/A	N/A	33	42
Peak Hour Vehicle Hours of Delay (35mph) (BY)	No Detection					
Peak Hour Vehicle Hours of Delay (35mph) (HY)	Information Unavailable					

CORRIDOR PERFORMANCE (CONTINUED)						
Segment #	STA 7	STA 8	TUO 1	TUO 2	TUO 3	TUO 4
Basic System Operations						
AADT (BY)	14000	13000	13000	13000	14000	16000
AADT (HY)	21000	19000	19000	19000	18000	23500
VMT (BY)	60284	1911	76076	26832	44520	11312
VMT (HY)	90426	2793	111188	39216	57240	16614.5
Daily Vehicle Hours of Delay (35 MPH) (BY)	No Detection					
Truck Traffic						
Total Average Annual Daily Truck Traffic (AADTT) (BY)	1315	1530	1530	970	1204	1560
Total Trucks (% of AADT) (BY)	9.39%	11.77%	11.77%	7.46%	8.60%	9.75%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	960	1117	1117	708	879	1139
5+Axle Trucks (as % of AADT) (BY)	6.85%	8.59%	8.59%	5.45%	6.28%	7.12%
Bottlenecks Data						
Bottleneck Existing:	Information Unavailable					
Peak Hour Traffic Data						
Peak Period Length	Information Unavailable					
Peak Hour Direction:						
Peak Hour Time of Day						
Peak Hour VMT (BY):	6028	191	7608	2683	4452	1131
Peak Hour VMT (HY):	9043	2799	11119	3922	5724	1662
Peak Hour Avg. Speed (mph)(BY):	44	60	60	44	44	40
Peak Hour Vehicle Hours of Delay (35mph) (BY)	No Detection					
Peak Hour Vehicle Hours of Delay (35mph) (HY)	Information Unavailable					

CORRIDOR PERFORMANCE (CONTINUED)						
Segment #	TUO 5	TUO 6	TUO 7	TUO 8	TUO 9	TUO 10
Basic System Operations						
AADT (BY)	3500	4500	4500	4000	5000	7500
AADT (HY)	6500	7000	6000	5500	7500	13500
VMT (BY)	12036	3312	33390	20004	10150	9450
VMT (HY)	22354	5152	44520	27506	15225	17010
Daily Vehicle Hours of Delay (35 MPH) (BY)	No Detection					
Truck Traffic						
Total Average Annual Daily Truck Traffic (AADTT) (BY)	293	306	306	200	250	375
Total Trucks (% of AADT) (BY)	8.37%	6.79%	6.79%	5.00%	5.00%	5.00%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	214	223	223	146	183	274
5+Axle Trucks (as % of AADT) (BY)	6.11%	4.96%	4.96%	3.65%	3.65%	3.65%
Bottlenecks Data						
Bottleneck Existing:	Information Unavailable					
Peak Hour Traffic Data						
Peak Period Length	Information Unavailable					
Peak Hour Direction:						
Peak Hour Time of Day						
Peak Hour VMT (BY):	1204	331	3339	2000	1015	898
Peak Hour VMT (HY):	2235	515	4452	2751	1522	1616
Peak Hour Avg. Speed (mph)(BY):	47	44	70	36	46	23
Peak Hour Vehicle Hours of Delay (35mph) (BY)	No Detection					
Peak Hour Vehicle Hours of Delay (35mph) (HY)	Information Unavailable					

CORRIDOR PERFORMANCE (CONTINUED)				
Segment #	TUO 11	TUO 12	MPA 1	TUO 13
Basic System Operations				
AADT (BY)	5000	4500	4500	3500
AADT (HY)	8500	7000	7000	6000
VMT (BY)	28175	13959	13095	43670
VMT (HY)	47898	21714	20370	74862
Daily Vehicle Hours of Delay (35 MPH) (BY)	No Detection			
Truck Traffic				
Total Average Annual Daily Truck Traffic (AADTT) (BY)	250	225	225	175
Total Trucks (% of AADT) (BY)	5.00%	5.00%	5.00%	5.00%
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	183	164	164	128
5+Axle Trucks (as % of AADT) (BY)	3.65%	3.65%	3.65%	3.65%
Bottlenecks Data				
Bottleneck Existing:	Information Unavailable			
Peak Hour Traffic Data				
Peak Period Length	Information Unavailable			
Peak Hour Direction:				
Peak Hour Time of Day				
Peak Hour VMT (BY):	2818	1396	1310	4367
Peak Hour VMT (HY):	4790	2171	2037	7486
Peak Hour Avg. Speed (mph)(BY):	35	50	48	49
Peak Hour Vehicle Hours of Delay (35mph) (BY)	No Detection			
Peak Hour Vehicle Hours of Delay (35mph) (HY)	Information Unavailable			

Current State guidance on measuring corridor performance emphasizes employing VMT rather than LOS. At this time no performance measures or standards employing VMT have been formulated for state wide application. In the case of the SR 120 corridor, VMS provide little real time measurement of traffic conditions due to low observation rates (below 20% detection for traffic delay for the freeway portion of the route) or lack of connection to the PeMS network (only three Tuolumne County stations).

The absence of real time data available through PeMS, along with issues with the accuracy of past traffic census renders assessment of freeway corridor performance problematic. In particular, the measurement of traffic volumes and percentage trucks for Segment 2 appear off. The change in traffic volume (Average Annual Daily Traffic or AADT) for 2015 gave 79,000 at I-5 and 67,000 at SR 99. The difference could be attributed to commuters from the Cities of Lathrop and Manteca that travel to the Bay Area. However, the change in truck volume (Truck AADT or AADTT) was from 14,536 at I-5 to 4,019 at SR 99. This difference would suggest that 10,517 trucks out of the total 12,000 difference were destined for and originated from locations in the Cities of Lathrop and Manteca. The decrease in five axle trucks at 8,458 lead all categories of trucks. The problem with this decrease is that it does not reflect growth in the share of total trucks that five axle trucks have enjoyed since the passage of STAA reported by the trucking industry, nor does it agree with field observation. Review of past traffic counts indicate that this pattern persisted since a verified count was done in 2001. When the volumes and truck percentages of 2000 were applied, the numbers came out more realistic and in line with patterns reported elsewhere in District 10. The corrected numbers are included in the Corridor Performance Table.

TRUCK DATA									
Percentage of Trucks by Axle Number on SR 120 Freeway (2015)									
	Total;	Two Axle	Percent	Three Axle	Percent	Four Axle	Percent	Five Axle	Percent
SJ 1	14,536	2,253	16.0	1,105	7.6	509	3.5	10,669	73.4
SJ 2	4,019	643	16.7	683	17.0	482	12.0	2,211	55.0
Change	10,517	1,610		422		27		8,458	

Information on peak hour for the SR 120 corridor provided by traffic census for the year 2015 provides little corridor coverage for work week commutes. Three count stations were employed-- one at the San Joaquin and Stanislaus Counties line; one at the Kastler Ranch Undercrossing approximately six miles east of the Stanislaus and Tuolumne Counties line; and, one at the Hetch Hetchy Aqueduct's Moccasin Reservoir and Power Station at the SR 49 South intersection. With a single exception, all peak hours reported are consistent with recreational use (Saturdays, Sundays, and Monday) rather than the work commute

Active Transportation

In the development and improvement of the SHS, District 10 has two specific responsibilities regarding Active Transportation (AT): to seamlessly include AT into the interregional movement of people and goods; and improve local AT networks as part of its commitment to CSS, Complete Streets, and safety.

In the context of SR 120, walking and bicycling provide a limited compass of travel given the time and distance each mode offers compared to automobile and transit modes given the distance for travel to employment centers. Ideally, integration of a local bicycle and pedestrian network into interregional commuting would center upon a hub and spoke type model with the hub being transit stops or park and rides accessing buses or rail. Facilities might provide bicycle racks and lockers in order to support a transit service accessing regional or interregional destinations beyond the immediate neighborhood. At present there are only two transit stops along the route, but both are on bus routes that do not employ SR 120.

Although there are several venues in which an interregional transit service may operate in the SR 120 corridor, much of the current interregional commute involves the disjunct SR 108 corridor. Only two communities—Cities of Oakdale and Escalon might serve as origins of a work commute. At this time it is estimated that 40% of workers in Oakdale and Escalon employ SR 120 in their commute to work (2,183 out of a total of 5,567).³¹ This number reflects commutes in both the west and east directions, and comports to a small ridership, that is unlikely to support an adequate fare box return.

Four communities (Cities of Manteca, Escalon and Oakdale; and the unincorporated town of Big Oak Flat and Groveland) need consideration for active transportation improvements. All lack sidewalks along the extent of the highway running through their neighborhoods; lack continuous crosswalks at intersections; and lack ADA ramps consistent with current design criteria. All have shared travel way bicycle facilities,³² and do not appear fully integrated into regional and interregional transit networks.

In Manteca, sidewalks can be found on both sides of SR 120 up to and just past Vasconcellos. Sidewalk gaps are present on both sides of the highway past Vasconcellos up to the signalized intersection at

³¹Census Transportation Planning Products 2006-2010.

³²The only exception is Escalon with Class II facility near the Mc Henry Avenue intersection.

Austin Road.³³ At the southwest corner of SR 120 and Austin Road is the Calla High School. ADA ramps can be found at all signalized intersections (SR 99 on and off ramps at all four street corners; Vasconcellos Road on the south corners, and at Austin Road at all four corners). But, the northeast street corner of Pestana Drive lacks any ramp; and the two ramps on El Rancho Drive do not appear to conform to the current design standard. The current layout suggests that there is no uninterrupted ADA access to Calla High School from the community located farther west. Pestana Road is the only signed Class II bicycle route in the corridor, but the intersection lacks the necessary crosswalk to allow a bicyclist to continue eastwards to Calla High School (although one could proceed westwards to signal at SR 99, cross there, and proceed eastwards to Austen Road). Transit service provides a single stop at Pestana Avenue.

With the City of Escalon there are several issues with inclusion of the SR 120 corridor into the local active transportation network. The highway that passes through town does not appear to be a main local thoroughfare compared to Main Street and McHenry Boulevard, and functions more as a barrier to walking and bicycling movements in the City to those thoroughfares. Along with the BNSF mainline, there are two railroad spurs, one parallel to SR 120 out to French Camp Road, and one parallel to Mc Henry, that appears abandoned south of the City. At present, no grade separation project has been proposed for any of the crossings. Within Escalon there are three schools: Dent Elementary School, El Portal Middle School, and Escalon High School that are separated from each other by the highway and railroads—both the elementary and high schools are found north of SR 120, while the middle school is found to the south.

SR 120 has been realigned recently in Escalon, moving the route south of Yosemite Avenue and Mc Henry Avenue, to directly connect to Main Street parallel the BNSF. East of McHenry Avenue, the realigned route follows California and Jackson Avenues to where it rejoins Yosemite Avenue east of Campbell Avenue. Within this realigned section of highway, sidewalks are intermittently present on the south side of the highway, and absent on the north. There are only two traffic signals on the corridor, at McHenry Avenue and Escalon Belotta Road intersection, and at Main Street. Only four intersections permit crossing the highway: at McHenry Avenue, at Main Street, at Viking Street, and at Elizabeth Avenue. The rest of the intersections have crosswalks that parallel the highway. Ramps are found at intersection with crosswalks, but not where crosswalks are absent. It is unclear if the ramps meet current ADA regulations. Escalon lacks any fixed deviated transit route.

Integration of SR 120 into the local pedestrian and bicycling network at Escalon is complicated by the expansion of the city limits westward to Brennan Road from McHenry and Escalon Belotta Roads. The segment between McHenry and Brennan is characterized by an active railroad spur line on the south edge of the highway separating it from the housing development farther south. No available right of way permits development of paths or sidewalks that border the housing area, unless the highway is extended further north, widening the shoulder between the railroad and the highway, to permit sidewalks and bicycle paths to occupy the southern shoulder.

For the City of Oakdale, there are two segments of SR 120 within the city limits. Segment STA 4 runs from the Stanislaus River Bridge near Rodden Road to F Street. Segment STA 5 runs along 'F' Street from the Yosemite Avenue intersection to Maag Avenue, and is crossed by a BNSF spur line just north of Segment STA 4.

³³ The traffic signal at Austin Road was a safety project prior to adoption of complete streets policy, and its implementation may not have considered local planning and interests.

A continuous sidewalk follows Segment STA 4 along the west side of the highway with crosswalks that both cross and parallel SR 120 at all four way intersections. A short Class I bicycle and pedestrian trail parallels the highway between the Stanislaus River and East 'A' Street. From East 'A' Street southward, Segment STA 4 is a shared lane bicycle facility. Ramps are present at all crosswalks, and appear in compliance with current ADA regulations. A future project to extend the Class I facility to 'F' Street is proposed in the RTP. There is no deviated transit service to connect with on the segment.

Similar conditions exist on Segment STA 5, sidewalks conform to both sides of the street with highway cross walks indicated at all intersections, and with ramps present. There is a sidewalk gap where it crosses the railroad (the surface is asphalt, and does not appear easily negotiated by wheelchairs). The ramps appear ADA compliant. No bicycle lanes or paths parallel the route. A single transit connection can be made at the K Mart off of Maag Avenue.

Schools in the City of Oakdale include four elementary schools, one junior high school, and one high school. Adjacent to the high school are two continuation schools. School campuses are dispersed throughout the community. Mobility issues may arise with children traveling from the portion of Oakdale fringed by STA 4 and STA 5 to either the junior high school or high school.

SR 120 in the contiguous communities of Big Oak Flat and Groveland covers approximately 2.3 miles. Within that distance sidewalks are only found between Powder House Street (Ponderosa Lane) and Back Street (Hopper Street) a distance of 0.14 miles. The area where the sidewalks are located consists of an older commercial area dating from the Gold Rush with sidewalks of similar age.³⁴ There are two pedestrian crossings without ramps. The bicycle facility is shared traffic lanes. At present, there is no deviated fixed route transit service, though there is summer service from YARTS into and from The Park.

In light of Department policies regarding CSS, and Complete Streets no specific recommendations regarding improvements to the streetscape in these four communities have been made. Following community outreach, the District should be prepared to address sidewalk gaps, as these hinder efficient and safe bicycle and pedestrian movements, but recommendations for improvement should come from the local community and affiliated stakeholders. Upgrade to bicycle facility above Class III is recommended in all contexts.

³⁴ The cover illustration shows this pedestrian facility, and the absence of a sidewalk on the opposite side.

KEY CORRIDOR ISSUES

- The freeway portion of SR 120 will be upgraded to six lanes by 2032. Ramp metering is anticipated to be in place before 2025 at all interchanges between I-5 and SR 99. An HOV or another managed lane facility from SR 99 into the Bay Area by the I-580 corridor may not be in place until after 2040.
- East of SR 99, the concept facility is a four lane expressway to Yosemite Junction where SR 108 diverges and continues northwards to Sonora. All segments not built to four lanes along this section are deficient except for the two lane Segments SJ 6, STA 1 and STA 2 which form the rural highway between the Cities of Escalon and Oakdale.
- South of the SR 108 diverge at Yosemite Junction, the concept facility for SR 120 is two lanes throughout to the entrance to The Park. Although most segments in this section are deficient, the deficiency is due to topographic constraints or low posted speed limits. Improvements to LOS may be gained through operational improvements such as shoulder widening, vehicle turnouts, and passing lanes. An exception might be Segments TUO 9 and TUO 10 that form the 'Main Street' of the towns of Big Oak Flat and Groveland, however topography and terrain appear to limit the available options, as bypassing the two towns appears infeasible.
- A bypass of the conventional highway segment in Manteca is proposed in current District 10 project planning. The two lane expressway will extend from the current SR 120 West freeway at SR 99 interchange eastwards to Jack Tone Road.
- Outside of a short Class II bicycle lane in Escalon, the bicycle facility operates as a shared travel way facility. Shoulder widening to accommodate bicycle refuge will be addressed on a project by project basis whenever feasible. Minimal upgrade of the facility to class IV is recommended where ever it does not conflict with local planning, complete streets, and context sensitive solutions.
- Pedestrian facilities in the four communities on SR 120 are inadequate. Sidewalk gaps, infrequent crosswalks, and missing or out of date ADA ramps were identified in the corridor. Upgrade of the facilities are proposed where ever the effort does not conflict with local planning, complete streets, and context sensitive solutions.
- No substantial interregional transit service employs the SR 120 corridor. Local and regional transit connections may be made in Manteca and Oakdale. Interregional transit originating outside the corridor from Modesto and Stockton employs the freeway corridor to the Pleasanton BART station.
- YARTS service may require further infrastructure support. The proposed Yosemite Junction rest area might be expanded to accommodate Park and Ride to change vehicles, as well as commuter transit into the San Joaquin Valley from Sonora and Jamestown.
- Development of active transportation improvements along the corridor are hindered by the lack of demand for a transit network, and by what appears to be an emphasis on transit use along SR 108.
- The ITS network needs to be expanded throughout SR 120 east of SR 99, with the opportunity to better measure real time traffic conditions. Better upkeep and maintenance is needed for the ITS elements located on SR 120 between I-5 and SR 99.

- A proposed expansion of the Altamont Commuter Express (ACE) plans to include a new rail line parallel to a portion of Segment SJ 1 near Mossdale. Currently, the proposal has circulated a draft Environmental Impact Report.

CORRIDOR CONCEPT

CONCEPT RATIONALE

The central purpose of a TCR is to report on the future direction of planning strategies in order to optimize interregional travel within a highway corridor for District 10. Caltrans currently emphasizes a planning approach that focuses upon sustaining and maintaining corridors, and less upon capacity expansion in light of concerns about the availability of future funding. Discussion of maintenance projects such as pavement rehabilitation, and design upgrades funded by programs other than the State Transportation Improvement Program (STIP) are generally excluded from the TCR.

The concept rationale for SR 120 relies upon the traveling public it serves. The freeway portion of the highway between I 5 and SR 99 has a six lane concept that is scheduled to be met in 2032. Conversion of two freeway lanes to HOV is a consideration within that timeframe, but is treated as development beyond the HY of 2040. Associated with that effort is the installation of ramp metering through out the freeway section. With the exception of the proposed two lane expressway extension from the SR 120 west and SR 99 interchange to Jack Tone Road, the facility between SR 99 and Yosemite Junction in Tuolumne County, the concept facility is a four lane expressway, with the exception of the segments between the Cities of Escalon and Oakdale (SJ 6, STA 1 and STA 2). This is to serve a diverse demand of both weekday work commute and seasonal recreational travel to The Park and other recreational attractions. From Yosemite Junction to The Park, the predominant use is recreational, and can be met by a two lane expressway facility with passing lanes or climbing lanes where ever feasible.

Operational issues within the corridor appear to rest on addressing constraints imposed on the system by topography and terrain. Although most segments east of Oakdale in Stanislaus County and through Tuolumne County are located in rolling or mountainous terrain, a number of proposed projects concern Segment TUO 8 otherwise known as New Priest Grade. Many of the specific projects are proposed State Highways Operations and Protection Program (SHOPP) efforts that are beyond the horizon of the ten year SHOPP planning.³⁵ SHOPP projects generally rely upon engineering judgement to establish need, and are often outside the scope of a TCR, however the planned SHOPP projects are listed for purposes of completeness.

Because of the relatively high traffic volume throughout the corridor, bicycle and pedestrian LOS are deficient. For bicycle travel, the implication is that even with eight foot shoulders throughout the corridor, a class III bicycle facility would not be adequate, and consideration should be given to upgrades to class I, II, and IV. In the existing facility, widening shoulders will improve conditions for sharing the travel lane by providing refuge, but are not the ultimate goal. Improvements for pedestrians are generally confined to community settings or where rural schools are near the corridor—Communities are associated with Segments SJ 3, SJ 5, STA 3, STA 4, TUO 6, TUO 9, and TUO 10; and rural schools are located within Segments SJ 4 and TUO 11.

Caltrans has endorsed the strategies of Smart Growth, Context Sensitive Solutions (CSS), and Complete Streets, which attend to local interests and vision to improve their communities. These strategies do not appear to fit with an interregional freeway facility with limited right of way for the improvements these approaches may call for. Within the context of Smart Growth, opportunities to enhance transit use in the corridor rely upon expanding existing park and ride facilities and providing direct transit access to managed lanes. Effort might be applied to examining the feasibility of a subway transit service extending the length of the freeway corridor. In addressing CSS, the approach best addresses expressways and conventional highways rather than freeways. With SR 120, an appropriate CSS approach would involve strategies that bypass the freeway, and support local enhancements to streets, commercial areas, and walkable and ridable corridors. Given that freeways typically restrict access of

³⁵ The Tuolumne County RTP (2016) breaks these out by Tiers 1a through 1c, 2, and 3.

bicycles and pedestrians for safety reasons, a multimodal complete streets approach within that corridor appears questionable except when considering transit.

In the 2016 general election, Stanislaus County passed a “self-help” sales tax increases to fund transportation improvements. With this second funding source, changes to the number, extent, and viability of projects on SR 120 in Stanislaus County may likely change.

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES³⁸

PLANNED AND PROGRAMMED PROJECTS					
Seg.	Description	Location	Source ³⁹	Purpose	Implementation Phase
SJ 1	Automatic Warning System	Guthmiller Road	SOP	Safety	Programmed
	Install Ramp Meters	Segment Wide	SOP	Demand Management	Planned
	Widen to six lanes	Segment Wide	RTP	Capacity	Planned
	Construct New Interchange	McKinley Road	SOP	Capacity	Planned
SJ 2	Widen to six lanes	Segment wide	RTP	Capacity	Planned
	Install Ramp Meters	Segment Wide	SOP	Demand Management	Planned
	Widen to six lanes	Segment Wide	RTP	Capacity	Planned
SJ 3	Construct new two lane expressway	Segment wide	SOP	Bypass	Planned
SJ 4	Construct new two lane expressway	West of Jack Tone Road	SOP	Bypass	Planned
SJ 5	STAA truck turning improvement	Mc Henry Avenue	SOP	Capacity	Planned
SJ 6, STA 1, through STA 2	No projects, facility meets concept				
STA 3; through STA 5	No projects, facility does not meet concept				
STA 6 through TUO 1	No projects, facility meets concept				
TUO 1	Curve Realignment	Near PM 5.1 (Rockhouse)	RTP	Performance	Planned
TUO 2	No projects, facility does not meet concept				
TUO 3 through TUO 4	Climbing Lanes	La Grange Road East to O’Byrne’s Ferry Road	RTP	Performance	Planned
TUO 4	No projects, facility does not meet concept				
TUO 5	Roadside Rest Area	Yosemite Junction	SOP	Safety	Planned
	Safety Improvements	Intersection of SR 108 and SR 120	RTP	Safety	Programmed

³⁸ These include Tier I projects from RTPs.

³⁹ RTP: regional transportation plan; SOP: District 10 Status of Projects

PLANNED AND PROGRAMMED PROJECTS (CONTINUED)					
Seg.	Description	Location	Source	Purpose	Implementation Phase
TUO 6 through TUO 7	No projects, facility meets concept				
TUO 8	Left Turn	SR 49 south	RTP	Safety	Planned
TUO 9	Install Turnouts	Segment wide	SOP	Operations	Planned
	Left Turn	Old Priest Grade	RTP	Operations	Planned
	Install Guardrails	Old Priest Grade to Coulterville Road	RTP	Safety	Planned
	Widen with climbing lanes	New Priest Grade	RTP	Operational	Planned
TUO 10	No projects, facility does not meet concept				
TUO 11	ADA and Complete Streets Project	Groveland	RTP	Safety	Planned
TUO 12	Non-motorized transportation improvements	Evergreen Road	RTP	Operations	Planned
		South Fork Tuolumne River Bridge	RTP	Operations	Planned
TUO 12; MPA 1, and TUO 13	No projects, facility meets concept				

PROJECTS AND STRATEGIES TO ACHIEVE CONCEPT³⁸

Seg.	Description	Location	Source	Purpose	Implementation Phase
SJ 1 and SJ 2	HOV	Cities of Lathrop and Manteca	Caltrans District 10	Performance	Long Term
SJ 3 through STA 7	Widen to four lanes	Segment wide	Caltrans District 10	Capacity, Performance	Long Term
TUO 1	Realign Eastbound Lane Rockhouse Curve	Near PM 5.1	Tuolumne County RTP	Performance	Mid to Long Term
TUO 2 through TUO 4	Widen to Four lanes ³⁹	Green Springs Road to Yosemite Junction	Caltrans District 10/Tuolumne County RTP	Capacity, Performance	Long Term
TUO 5	Two lane expressway	Segment wide	Caltrans District 10	Performance	Long Term
TUO 6	Install Left Turns	SR 49 north; Red Hills Road	Tuolumne County RTP	Operations	Long Term
TUO 6 through TUO 9	Widen Shoulders	SR 49 north to Big Oak Flat	Tuolumne County RTP	Performance, Active Transportation	Long Term
TUO 7	Install Left Turn	Jacksonville Road	Tuolumne County RTP	Operations	Long Term
TUO 8	Install Left Turn	Old Priest Grade Road	Tuolumne County RTP	Operations	Long Term
TUO 8 through TUO 10	Shoulder Widening	Moccasin to Groveland	Tuolumne County RTP	Operations	Long Term
TUO 10	Sidewalk and Crosswalks	Groveland	Tuolumne County RTP	Operations	Long Term
TUO 10 through TUO 11	Feretti Road Trail	East End of Groveland to High School	Tuolumne County RTP	Active Transportation	Long Term
SJ 3, SJ 5, STA3, STA 4, TUO 10	Improve walkability and disabled access	Manteca, Escalon, Oakdale, and Groveland	Caltrans District 10	Active Transportation	Short to Mid Term
All except for MER 1 and SJ 14	Interregional express bus service or light rail	City of Merced to City of Lodi	Caltrans District 10	Multimodal	Long Term

³⁸ These, where appropriate, will include Tier II and Tier III projects listed in current RTPs.

³⁹ This includes two separate projects in the RTP

APPENDIX: GLOSSARY OF TERMS AND ACRONYMS

Glossary of terms

Annual Average Daily Traffic (AADT) -- the total traffic volume on a given highway or segment in a year divided by 365. The year is from October 1st through September 30th. Raw traffic counts are obtained through a sampling program of highway locations throughout the District, rather than continuous sampling throughout the year (though this may not be accurate for PeMS stations that continuously monitor traffic volumes). These counts are adjusted to compensate for daily and seasonal variability compared to previous records.

Base year – the initial year of analysis, usually, the year that recent data is available.

Bikeways –

Class I (Bike Path) – a separate travel right of way for the exclusive use of bicycles, pedestrians, and possibly equestrians.

Class II (Bike Lane) – a lane within a shared right of way for use of bicycles. Usually separated from motorized vehicle traffic by striping, and may permit merging at approaches to intersections for right turns.

Class III (Bike Route) – shared right of way between motorized vehicles and bicycles, may have wide shoulders to accommodate separation of the two modes, or may be signed to alert motorists to shared use.

Class IV (Protected Bike Lane) – similar to a Class II, a lane within a shared right of way for use of bicycles. Physically separated from motorized vehicle traffic curbs or barriers.

Bottlenecks – a location where the carrying capacity is substantially less than elsewhere on a route. Often this occurs with a lane reduction, or excessive merging and weaving, or driver distraction, or a surge in demand, or a combination of these and other factors.

California Transportation Plan (CTP) – a statewide, long-range transportation plan with a minimum 20-year planning horizon intending to address both future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve a collective vision for California's future, statewide, integrated, multimodal transportation system. The CTP is prepared in response to federal and State requirements and is updated every five years.

Capacity – the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Concept LOS – the minimum acceptable LOS over the next 20-25 years.

Conceptual Project – an action or a project that needed to maintain mobility or serve multimodal users, but is not included in a fiscally constrained plan and is not programmed. It could be included in a General Plan or in the unconstrained section of a long-term plan.

Corridor – a broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as informational purposes and not analyzed in the TCR.

Facility Concept – describes the future highway facility and the strategies that may be needed to be deployed within the next 20-25 years. This can include capacity increasing, State highway, bicycle facility, pedestrian facility, transit facility, non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, TDM and incident management.

Facility Type – refers to a highway as being either a freeway, expressway, conventional, or a one-way city street.

Freight Generator – any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

Headway – the time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

Horizon Year – The year that the future (20-25 years) data is based on.

Intermodal Freight Facility – a location where different transportation modes and networks (air, marine, rail, truck) interconnect and allow freight to be transferred (transloaded) from one mode to another.

Intelligent Transportation System (ITS)—an integrated network of communications-based information and electronics technologies to collect real time traffic information, process it, and take appropriate actions. The intended outcomes are to improve transportation safety, mobility and to enhance worker productivity by reducing travel delay.

Level of Service (LOS) -- a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:



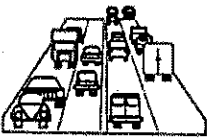
LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.



LOS B is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.



LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.



LOS D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.



LOS E reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.



LOS F a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Multi-modal –the different modes of commuting within a travel corridor (automobile, subway, bus, rail, bicycle, pedestrian, or air).

Park-and-Ride – location where commuters park their personal vehicles and continue their trip by carpool, vanpool, or transit.

Peak Hour – the hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – the hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Peak Period – the part of day during which traffic congestion is at its greatest. Typically, this happens twice a day, in the morning and in the evening during the time most people commute to work or return (rush hour). Peak Period is defined for individual routes, not a District or statewide standard.

Planned Project – a planned improvement or action is a project in a fiscally constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure.

Post mile – a measured location on a route within the State Highway System. Typically measured on routes from county lines, the values of a post mile will increase from south to north, or west to east. When a section of road is relocated, new post miles (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If

relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the remainder of the route within the county will remain unchanged.

Programmed Project – an improvement or action identifying funding amounts by year, and included in short term project funding documents such as the State Transportation Improvement Program (STIP) or the State Highway Operation and Protection Program (SHOPP). Programming refers to projects permitted for expenditure of monies allocated for project development and implementation (are subject to oversight by project managers).

Railroads:

Class I – a carrier having annual operating revenues of \$250 million or more. This class includes the nation's major railroads. In California, Class I railroads include Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railway (BNSF).

Class II – a carrier having annual operating revenues between \$250 million and \$20 million. Class II railroads are considered mid-sized freight-hauling railroad in terms of operating revenues. They are considered "regional railroads" by the Association of American Railroads.

Class III – a carrier having annual operating revenues of \$20 million or less. The typical Class III is a short line railroad, which feeds traffic to or delivers traffic from a Class I or Class II railroad.

Route Designation – refers to design standards applicable to a route based upon legislative intent. Typical legislative designations include but National Highway System (NHS), Interregional Route System (IRRS), Freeway and Expressway System, and Scenic Highway System.

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density as determined by the U.S. Census Bureau.

Segment – A portion of a facility between two points.

System Operations and Management Concept – Describe the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (aux. lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV land to HOT lane), TMS Field Elements, transportation demand management, and incident management.

System Preservation - the unmet needs estimate for preserving the state's transportation system incorporates three elements: preventive maintenance, rehabilitation and reconstruction, and regulatory mandates.

1. Preventive maintenance applies cost-effective treatments to existing transportation infrastructure to help preserve it, slowing down future deterioration and maintaining or improving the functional condition of the infrastructure (without significantly increasing the structural capacity). Preventive maintenance strategies are typically applied to assets that are in good condition and have significant remaining service life. This ensures the structural integrity of transportation systems that serve people and freight.
2. Rehabilitation and reconstruction strategies are applied to transportation infrastructure that is in fair to poor condition. The goal here is to restore assets to an acceptable operating condition.

3. Preservation efforts also include the cost of regulatory mandates. Examples of regulatory mandates include storm water retrofitting required by the Clean Water Act (CWA) and state water quality control boards, and improvements required by the Americans with Disabilities ACTC (ADA).

Transportation Demand Management - programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telework, and alternative work hours. TDM strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

Tier I - partially programmed projects

Tier II - fiscally constrained projects that are not programmed. Projects in this category must be from a fiscally constrained document/list (such as the fiscally constrained project list in an RTP) and not from an unconstrained document (such as a TCR).

Tier III - projects that the District will advocate to be included in fiscally constrained projects lists (RTP, SHOPP) during the 20-25 year planning horizon. These are projects that are not currently in a fiscally constrained project list.

Tier IV - projects that have a demonstrated need within the 20-25 year time horizon and have been identified as high priority by the District but are unlikely to receive funding within the 20-25 year time horizon. These are likely projects that will be programmed if an unexpected funding source becomes available, like an initiative or local measure.

Tier V - other projects identified as needed by the District: these may be within the 20-25 year time horizon, beyond the 20-25 year time horizon, or only conceptual in nature.

Transportation Management System (TMS) -- the business processes and associated tools, field elements and communications systems that help maximize the productivity of the transportation system. TMS includes, but is not limited to, advanced operational hardware, software, communications systems and infrastructure, for integrated advanced TMS and information systems, and for electronic toll collection systems.

Urban – 5,000 to 49,999 in population designates an urban area. Limits are based upon population density as determined by the U.S. Census Bureau.

Urbanized – over 50,000 in population designates an urbanized area. Limits are based upon population density as determined by the U.S. Census Bureau.

Vehicle Miles Traveled (VMT) – the total number of miles traveled by motor vehicles on a road or highway segments.

Acronyms

AADT - Annual Average Daily Traffic

AB – Assembly Bill

ACE - Altamont Commuter Express

ADA - Americans with Disabilities Act of 1990

APCD - Air Pollution Control District

BART - Bay Area Rapid Transit

BNSF - Burlington Northern Santa Fe

BRT - Bus Rapid Transit

CALTRANS - California Department of Transportation

CAPM - Capital Preventive Maintenance

CARB – California Air Resources Board

CCOG - Calaveras County Council of Governments

CCTVs - Closed Circuit Television Cameras

CFR - Code of Federal Regulations

CHP - California Highway Patrol

CMA - Congestion Management Agencies

CMAQ - Congestion Mitigation and Air Quality

CMIA - Corridor Mobility Improvement Account

CMS - Changeable Message signs

CSMP - Corridor System Management Plan

CSS - Context Sensitive Solutions

CTC - California Transportation Commission

CTP - California Transportation Plan

DOF- Department of Finance

DSMP - District System Management Plan

DWR - Department of Water Resources

EB - Eastbound

EIS - Environmental Impact Statement

EIR - Environmental Impact Report

FHWA - Federal Highway Administration

F&E - Freeway and Expressway

GHG - Green House Gas

HAR - (Highway Advisory Radio (HAR)

HDM – Highway Design Manual

HFST – Friction Surface Treatment

HOT - High occupancy toll lane

HOV - High occupancy vehicle lane

HPP - High Profile Projects

HSIP - Highway Safety Improvement Program

HSR - High Speed Rail

IRRS - Interregional Road System
ITS - Intelligent Transportation System
ITIP – Interregional Transportation Improvement Program
ITSP - Interregional Transportation Strategic Plan
ITTS - Interregional Road System

KM - Kilometer
KPRA - Kingpin to Rear Axle

LOS - Level of Service

MAP-21 - Moving Ahead for Progress in the 21st Century
MAX - Modesto Area Express
MCAG - Merced County Association of Governments
MCLTC - Mariposa County Local Transportation Commission
MCTC - Mariposa County Transportation Commission
MER – Merced
MPA – Mariposa County
MPO - Metropolitan Planning Organizations
MVP – Maintenance Vehicle Pullouts

N/A - Not available
NHS - National Highway System
NTN – National Truck Network
OWP – Overall Work Program

PA&ED - Project Approval/Environmental Document
PID - Project Initiation Document
PM - Post Mile
PPNO - Planning/Programming Number
PS&E - Plans, Specifications, and Estimates
PSR - Project Study Report

RIP - Regional Improvement Program
ROW - Right of Way
RP – California Rail Plan
RSTP - Regional Surface Transportation Program
RTIP - Regional Transportation Improvement Program
RTIF-Regional Transportation Impact Fee
RTP - Regional Transportation Plan
RTPA - Regional Transportation Planning Agencies
RWIS - Roadway Weather Information System

SAFETEA - Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2005
SB - Senate Bill
SCS - Sustainable Community Strategies
SHA - State Highway Account
SHOPP - State Highways Operations and Protection Program
SHS - System Highway System
SHSP - Strategic Highway Safety Plan

SJ - San Joaquin
SJCOG - San Joaquin Council of Governments
SJRTD - San Joaquin Regional Transit District
SJVGMAP - San Joaquin Valley Goods Movement Action Plan
SMF - Smart Mobility Framework
SR - State Route
STA - Stanislaus
STANCOG - Stanislaus Council of Governments
STRAHNET - Strategic Highway Network
STAA - Surface Transportation Assistance Act
STIP - State Transportation Improvement Program
STRAIN - Structure Replacement and Improvements Needs

TASAS – Traffic Accident Surveillance and Analysis System
TCR - Transportation Concept Report
TDM – Transportation Demand Management
TE - Test and Evaluation Project
TEA-21 - Transportation Equity Act for the 21st Century
TERO - Tribal Employment Rights Ordinance
TDM - Transportation Demand Management
The Park - Yosemite National Park
TMC - Transportation Management Centers
TMD – Transportation Demand Modal
TMS - Transportation Management System
TSDP - Transportation System Development Program
TSMO - Transportation System Management and Operations

US - United States
UTC - Ultimate Transportation Concept
UP - Union Pacific

VMS – Vehicle Monitoring Station (replaced TMS, traffic monitoring station)
VMT – Vehicle Miles Traveled

YARTS - Yosemite Area Regional Transportation System